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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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AMENDMENTS TO NAVIGATION LAWS.

Every applicant for license as either master, mate, pilot, or engineer under the provisions of this title shall make and subscribe to an oath or affirmation, before one of the inspectors referred to in this title, to the truth of all the statements set forth in his application for such license.

Any person who shall make or subscribe to any oath or affirmation authorized in this title and knowing the same to be false shall be deemed quilty of perjury.

Every licensed master, mate, pilot, or engineer who shall change, by addition, interpolation, or erasure of any kind any certificate or license issued by any inspectors referred to in this title shall, for every such offense, upon conviction, be punished by a fine of not more than five hundred dollars or by imprisonment at hard labor for a term not exceeding three years.

In every case of collision in which it is practicable so to do, the master shall, immediately after the occurrence, cause a statement thereof, and of the circumstances under which the same occurred, to be entered in the official log book. Such entry shall be made in the manner prescribed in section forty two hundred and ninety-one, and failure to make such entry shall subject the offender to the penalties prescribed by section forty-two hundred and ninety-two.

The master of any vessel of the United States bound from any port therein to any foreign port, or from any foreign port to any port of the United States, shall, before clearance, receive on board and securely convey all such mails as the Post Office Department, or any diplomatic, or consular officer of the United States abroad, shall offer; and he shall promptly deliver the same, on arriving at the port of destination, to the proper officer, for which he shall receive two cents for every letter so delivered; and upon the entry of every such vessel returning from any foreign port, the master thereof shall make oath that he has promptly delivered all the mail placed on board said vessels before clearance from the United States; and if he shall fail to make such oath the vessel shall not be entitled to the privileges of a vessel of the United States.

NEVER before has such a stupendous collection of machinery been assembled as that which is now being exhibited at the Paris Exhibition, where is to be seen, in full size machinery models, and drawings, the world's best and latest practice in every deparment of engineering—civil, mechanical, electrical.

THE RECONSTRUCTION OF THE PARIS.

Mr E. Platt Stratton, of the American Bureau of Shipping, who went abroad recently to approve of the plans for the reconstruction of the American Line steamship Paris, to be hereafter known as the Philadelphia, which is now in the hands of shipbuilders Harland & Wolff, Belfast, Ireland, states that work on that vessel is progressing finely, and that when completed she will be one of the best boats in the trans-Atlantic express steamer trade. She is receiving an entire new bottom, and will have new engines and new boilers. Her power will be greater than before her stranding, and she is expected to eclipse in all ways her former records. She will carry but two funnels instead of three, but otherwise her exterior appearance will be practically the same. The engines will be of the quadruple-expansion type, with cylinders as follows: High pressure, 38½ in.; first intermediate, 54 in.; second intermediate, 76 in., and low pressure, 106 in., by a common stroke of 5 ft. The maximum working pressure from the boilers will be 206 lbs., at which pressure the average number of revolutions will be 90 per minute. There will be six double-ended and four single-ended return tubular boilers, all 15 ft. 8 in. in diameter, the double-ended being 19 ft 6 in. long and the single-ended 10 ft. 6 in. long. Collectively they will have 1,129 sq. ft. of grate, and 39,618 sq. ft. of heating surface. The bottom of the ship is to be all new, including new keelson, new keel, new tank top, and new flooring. The stern, under water, is to be rebuilt, so that the shafts of the twin screws will be encased within the hull instead of being hung on struts as formerly.

The American Bureau of Shipping, which is classing this vessel, received the order to classify and supervise the construction of all of the new American Line steamships now building, amounting to 72,000 tons.

THE DOMINION OF IRON AND COAL.

A very interesting address was delivered recently before the American Association for the Advancement of Science, at its meeting in New York, by the well-known statistician, Mr. Atkinson. His subject was "The Dominion of Iron and Coal—What it Stands For." Summarizing the salient points of his paper, the Rochester Post-Express says: "He showed how all the great manufacturing nations of the world would eventually become dependent upon the United States. Only this country has a supply of these products that is adequate to meet not only the demands of the home market, but those of the foreign market. Already the scarcity of coal has begun to be felt in Europe, as we pointed out recently, and a scarcity of the ores from which Bessemer steel is made has been long impending. Mr. Atkinson showed that with the abatement of the supply of both commodities in Europe, there would be an increased demand for them, and the problem would be how to supply this demand. The industrial development of the world is so rapid that in ten years the supply of iron in the United States, which is now 14,000,000 tons, will have to be doubled. Can this be done? Mr. Atkinson estimates that in 1910 the industries of the world will have to have 55,000,000 of tons, and that half of it must come from the United States. But if we can furnish much more than we need for our own consumption, it is obvious that a tremendous boom in the iron industry is likely to come in the near future."

The claims made here are based on the facts and figures, and they contain the promise of an unparalleled era of prosperity for the United States. With wise statesmanship, this country should reach a commanding industrial position among the nations of the earth, early in the new century.

THE NEW GERMAN LINER.

The following particulars are given in the Glasgow Herald of the machinery and hull of the immense trans-Atlantic liner which the North German Lloyd are about to have built in Germany. She will be the largest powered ship yet built, whether for merchant or naval work, and there will be four independent sets of engines, each in a separate compartment. They will be similar in dimensions, and the four cylinders, working on the quadruple-expansion system, will in each set be of the following dimensions: High-pressure, 37½ in.; first intermediate, 49 in.; second intermediate, 74 in.; and low-pressure, 112 in.; the stroke of the piston in all cases being 70 in. The division of the power through four engines has thus reduced the size of the low-pressure cylinder considerably, notwithstanding that there are four stages of expansion, for in some of the ships now on the Atlantic this cylinder is 120 in. The engines are to run at 80 revolutions, equal to a piston speed of 935 feet per minute. With steam at 210 lbs. per square inch, the engines are to indicate 36,000 horse-power, which, it is expected, will give easily 23½ knots on the Atlantic when the ship is fully loaded. This is 3,000 i. h. p. more than in the Kaiser Wilhelm der Grosse, of which, so far as hull is concerned, this new ship is a direct development; and is 8,000 i. h. p., or 30 per cent. more than in the Oceanic, which the new ship will equal in size, the increase being the result of the desire to get 2½ miles added to the speed per hour attained by the White Star liner. The boilers are to be of the cylindrical Scotch type, 12 of them double-ended and seven of them single-ended, and thus there will be 124 furnaces in all, there being in all 3,000 square feet of grate surface, so that each square foot is expected to give 12 i. h. p.—quite a reasonable demand to make on the furnaces. The power necessary for the desired speed was determined by model experiments in the North German Lloyd Company's tank at Bremerhaven. The vessel is to be 706½ ft. over all, with a beam of 72 ft., and the draught, when loaded, will be 28½ ft. She is thus a "beamier" ship than the Oceanic, for she is only 2½ ft. longer, yet 4 ft. broader. This will reduce her draught for a given displacement, and may increase her speed for her power. The new ship will not be on her station till 1903.

CONTRACTS FOR NEW TONNAGE.

A deal in which over $1,000,000 is involved was closed this week, by J. C. Gilchrist, the well-known Cleveland vessel owner, and Robert L. Ireland, vice president of the American Ship Building Co. Aside from the transaction, in which the big combinations are interested, it is one of the largest ship building deals ever closed on the lakes. The contract which Mr. Gilchrist awarded to the American Ship Building Co, is for five large steel steamers each to have a carrying capacity of 5,000 gross tons of ore at cost of about $235,000 which will make the cost of the five steamers $1,145,000.

The new boats are to be completed and ready for business by the opening of navigation next season. About 10,000 tons of material will be used in their construction.

Work on the vessels will be started as soon as the material is received. It has not been definitely settled at which of the shipyards the steamers will be built, but the most of the work will be done at Cleveland and Lorain. The steamers will be up-to-date in every particular, and they will be among the finest equipped on the lakes.

Mr. Gilchrist owns a large fleet of wooden vessels and he is one of the most successful vessel managers on the lakes. Other parties are figuring on building vessels and some more contracts will probably be closed during the next few weeks. Plans for a large car ferry steamer for the Flint & Pere Marquette Railway Co., have been prepared and a duplicate of the Pere Marquette may be built this winter.

CLEVELAND.

Special Correspondence to The Marine Record.

Capt. Frank C. Rae, who will bring out the new Carnegie steamer Princeton when completed, will have command of the Harvard, while awaiting the completion of the Princeton at the Lorain yards of her builders the American Ship Building Co.

A block of 25,000 tons of ore to be moved from ports at the head of Lake Superior during the next three months was covered this week by lake freight contracts at 75 cents, which is the lowest figure that charters have been made at from the head of the lakes for a year.

D. & C. steamers leave Cleveland and Detroit every morning except Sunday at 9:30 a. m.; arrive at destination seven hours later, giving a delightful daylight ride across Lake Erie. Fare, only one dollar each direction. Send 2 cents for illustrated pamphlet. Address A. A. Schantz, G. P. A., D. & C. Line, Detroit, Mich.

Second mate Symes, of the steamer Cadillac, had his leg caught in the bight of a line last Tuesday at Marquette and his limb was taken off between the knee and the foot. He was removed to a hospital for treatment, and in spite of the shock will recover. The injured man is a brother of Capt. George A. Symes of the steamer Frontenac.

Owners of vessel property are wondering what is to be the outcome of the terms of the sale of the Stephens mine by John D. Rockefeller to the Carnegie Steel Co. The stipulations of the agreement are that the boats of the Bessemer Steamship Co. shall carry the ore produced by that mine down the lake at the rate of fifty cents per gross ton, free in and out.

Capt. James Corrigan is now searching for the bodies of his two daughters lost in the Idler disaster on the Canadian shore of Lake Erie. Capt. Corrigan has been away from home for four or five days now and may not return home before next week. The captain has no method of search aside from patroling the beach in a boat and making careful inquiry from everybody living along the lake.

Complaints are being received by owners and managers from masters of steamers with tow consorts about the steamers passing them in the narrow channels at great speed. One captain reported that a passenger steamer passed him in the Detroit river running at the rate of eighteen miles an hour and came near parting his steel hawser. His barge would have gone on the bank had the line parted and as it was he had much difficulty in handling her.

The ore market is quiet this week. Up to the present time there has been a brisk movement of ores forwarded to furnaces, but now they are requesting in some cases to have shipments held back until called for later on. From this time on to the close of the navigation season it is probable that ore will be unloaded on Lake Erie docks as vessels arrive with cargoes from the upper lakes. The situation, as to the ore trade is, therefore, considered dull as to sales or movements by rail, but it still keeps pouring down by lake.

A telegram has been received by D. Jay Collver, the Cleveland agent of the Northern Steamship Co., from W. M. Lowrie, the general passenger agent, saying that it might be announced that the blockade at the Soo would have no effect upon the service of that company's boats. He does not say what the provisions are, but he asserts that the boats will be run with due regularity. The steamers, which are not of very deep draft, may be taken through the old channel at the Soo as they were a year ago, when the same sort of an accident occurred, shutting off navigation of St. Mary's river.

The announcement is made by vice president R. L Ireland, speaking for the American Ship Building Co., that Capt. J. C. Gilchrist of this city, had entered into a contract with that company for the construction of five steel steamers, the same to cost in the aggregate over $1,000,000. The dimensions of the boats were not given by Mr. Ireland, and Capt. Gilchrist did not care to give them. Capt. Gilchrist simply says he is having built five large steamers not of the largest type, but good sized boats for the ore, grain and coal trade. The boats are to be ready by the opening of navigation the first of next year. Where they will be built has not been exactly decided.

Capt. George P. McKay, chairman of the committee on navigation of the Lake Carriers' Association, visited Amherstburg a few days ago to determine upon the location of lighted buoys to aid navigation while the dredges are working in the channel. The dredges are now working in a direct line with the Elliott point range light. Four lighted buoys have been placed on the westerly side of the channel and indicate the extreme westerly point at which navigation is safe. Indeed, it is safest right in the line of the four buoys. The channel, therefore, lies between the Elliott point range light and the four temporary buoys and vessels should pass as close to the buoys as possible.

Tuesday morning the tug William D. of the Great Lakes Towing Co., and the tug Alpha of the Maytham independent line left Ashtabula in a race for the tow of the steamer Wawatam, which was about two miles up the lake. The William D. reached the Wawatam first and in running up to take the line was struck by the starboard bow of the steamer and rolled over, filling rapidly and sinking in forty feet of water. Capt. Wylie and Fireman Bartram of the ill fated tug jumped into the lake and were rescued by the Alpha. Engineer Joyce stepped from the rail of the tug to the anchor stock of the Wawatam and was taken aboard. Lineman Harry Stearns jumped from the tug into the water and did not come to the surface, although an excellent swimmer. He was twenty years of age and a resident of Ashtabula.

The sale by John D. Rockefeller of his ore mines to the Carnegie Steel Co. and the seeming agreement that has arisen out of the transaction is taken to be an acknowledgement on his part of a failure to control lake freight rates. When the middle of July came the iron market was as far off as ever, and instead of there being any hope of a material increase in the amount of business to be done a still further demand for the restriction of production was seen, with the result that the rates for the movement of "wild" ore grew weaker and weaker. One drop after another was announced until recently a block of ore was taken for future delivery, the rates applying being 75 cents from Duluth to Ohio ports. When this was seen the general vessel owner acknowledged that the effort to control the rate situation made by Mr. Rockefeller had failed.

The past week has been the dullest that local vesselmen have experienced during the season. There is now but little or no demand for vessels in either the ore or coal trades, but fortunately there are few vessels on the market. Coal shippers have been talking of reducing the Lake Superior rate from 35 to 30 cents and it was thought they would make an effort in that direction on Wednesday, but they did not do so. The only ore on the market is a block from the head of Lake Superior to run through the balance of the season and on which the shipper is offering only 65 cents. Iron ore shipments from Lake Superior by lake to August 1, amounted to 9½ million tons as compared with 7½ million tons to the same date last season, showing an increase of 23½ per cent. Shipments, however, are now being curtailed. A small block of ore from the head of the lakes was placed at 75 cents, but the freight market is almost lifeless.

Formal orders have not yet been issued for the transfer of Col. Mansfield from San Francisco to Cleveland. Col. Mansfield is to succeed Col. Smith and the latter is to go to the Pacific station. Col. Smith stated this week that he had been informed that the orders would be issued about Nov. 1. Col. Mansfield has had great experience in light-house engineering. He was in charge of the tenth, eleventh and ninth light-house districts, in the order named, from 1886 to 1888. In 1888 he was placed in charge of the river and harbor improvements in western Michigan and later in charge of the same work in northern Indiana. Col. Mansfield is a competent and brilliant engineering officer and will bring to Cleveland the result of many years' experience. As chief officer in charge of the division, like Col. Smith, he will have full charge of any harbor extension which the government may see fit to construct in this district.

Quite a little talk has been occasioned recently, and especially in Toledo, over the appointment of Messrs. Pleitz and Judson, of Cleveland, as inspectors of vessels in a new district recently created, of which Toledo is the center. Until the first of July, Toledo was a part of this district, but the vessel men there commenced to complain that they were too far away from Cleveland, and had to wait to get results when they wanted boats inspected. They petitioned the Supervising Inspector General of Steamboats and the Secretary of the Treasury for the location of a station there. It was decided to open that office, in consequence of which the office force here was cut in two and those who had been deputies in Cleveland were made the local inspectors at Toledo. Now the marine men of Toledo want citizens of that town to be appointed as United States Local Inspectors of Steamboats and they don't take kindly to the idea of sending on men from this port to handle their business.

There is no change seen up to the present in the attitude of the striking freight handlers and the agents of the steamship companies. The longshoremen, when they saw that the agents were persistent in refusing to come to the terms they laid down, sent at once for President Keefe, who was then in Sandusky. President Keefe refuses to discuss the strike at present, saying he knows nothing of the merits of the case of his men. He did say, however, that he is going to try to keep the strike within the confines of the city of Cleveland if he can, and that it will be only as a last resort that the other ports will be brought into it. He has hope of coming to an agreement to-day. As soon as President Keefe reached the city he was in communication with the agents of the package freighters, and a conference was arranged for Thursday morning at 9 o'clock. Where this will be held has not been decided, but more than likely it will be held in the office of Mr. Tucker, in the Western Reserve Building. The claim now made by the men is that when the year opened they had an understanding with the agents of the various companies that they were to get 35 cents an hour, and 40 cents for overtime, until August 1 and after that date 40 cents an hour and 45 cents for overtime. The claim of the men is that this increase was paid for the first two weeks in August, and was then denied them. When the agents refused to grant the increase, they say, the strike was called.

DULUTH—SUPERIOR.

Special Correspondence to The Marine Record.

The greatest gold-producing country that has yet been discovered is known by the name of the Lake-of-the-Woods gold fields district, near Rat Portage, located on lake, which contains 14,000 islands. The mines are located on the islands. The principal mines are Mikado, paying from 50 to 60 per cent., and the Sultana, paying from 30 to 40 per cent.

The steamer William Edenborn broke all existing cargo records made up to last Monday by loading 7,521 gross or 8,424 net tons of iron ore at Ashland on a draft of 17 feet 6 inches forward and 18 feet 3 inches aft. The largest cargo previously taken on was in the Bessemer barge John Smeaton, last summer—8,339 net tons. Edenborn is one of the 500-ft. steamers built for the American Steel & Wire Co. last winter.

Men are being laid off at nearly all of the ore docks at the head of Lake Superior, as well as along the ore roads that are carrying ore to the docks. The new Missabe ore docks are nearing completion, but it is doubtful if they will be operated this season unless there is a sudden and unexpected improvement in the demand for ore. At present there are very few cargoes available, though there is an abundance of vessel room.

The Great Northern Railway Co. is building a steel grain elevator of 2,500,000 bushels capacity at Superior, Wis., and Vice-President W. L. Hill, in discussing the subject, is reported to have said that "the saving by reduced insurance, etc., in a steel elevator will more than make up the difference in interest on the cost of the steel house, though it will cost twice as much per bushel as the wooden structure. The new steel elevator will be of 2,500,000 bushels capacity and will probably be ready for operation in 1902. The Great Northern road will then have 7,000,000 bushels capacity on the Duluth market, all but 1,800,000 of which will be the most modern steel eonstruction, operated electrically.

B. B. Inman, who sold out to the Great Lakes Towing Co. last year, intends to introduce a third tug line here. He will have four tugs and will have the offices in the building occupied by the Barry line two years ago. He will start in with the tugs Castle and E. T. Carrington and will visit lower lake ports shortly to purchase two more. Capt. Inman was made local manager of the tug trust after he had sold out to it, and held that position until this spring, when he was ousted on the demand of Capt. James Davidson, a big stockholder in the trust, at least it is generally thought that Capt. Davidson requested that Inman should vacate the position of manager of the tug line at the head of the lakes.

A document was placed on record at Duluth on Tuesday which has considerable interest in regard to the agreement said to have taken place between the Carnegie and Rockefeller interests in their struggle over lake ore rates. It is the record of the sale of ore in the Stephens mine by the Lake Superior Consolidated Iron Mines to the Carnegie Steel Company. The former corporation is one formed by Rockefeller to own the iron mines. The sale is provisional that the ore will be carried by the Duluth, Mesaba & Northern Railway and the Bessemer Steamship Company. It is stated in the document that for lake carriage Carnegie is to pay 50 cents per ton, plus the cost paid by the vessel for having the ore unloaded at the receiving port.

The Reiss Coal Co., which established itself in Ashland last spring on the old Lake Superior dock, has made great improvements. The sub and superstructure of the dock have been completely rebuilt and the manner of the remodeling places it among the very first of the modern coal docks. The dock is equipped with five lately patented rigs. The system for carrying the coal from the place of discharging to the dump is every part automatic, just one man being required to operate the five cars. With one man as operator and another as trimmer in the car, as much coal as desired can be loaded with a minimum of expense. The Reiss people now have 25,000 tons of anthracite and 68,997 of bituminous coal on their Ashland dock, most of which will be sent to points in Minnesota and upper Michigan.

A special from La Crosse, Wis., says its was discovered today that a party of twenty two men from La Crosse, who make log-stealing a profession, had attacked the raft of J. W. Van Sant, which was tied at Dresbach, Minn., and removed several hundred logs from it, which are valued at $1,000 or more. The men went up in sixteen skiffs and overpowered the watchman. After taking the logs they came to La Crosse with them and sold them to a local lumberman. Detectives are working on the case. Log stealing is a profession of which little is known or heard. They have a protective association, and all members are pledged to utmost secrecy. Men who are in a position to know about their movements, such as bridge engineers, never tell on them, as they know it means great personal violence. During the past 20 years $1,000,000 worth of logs have been stolen.

THE Philadelphia Record for May 28 says: An interesting cargo from Asia minor, consisting of a purple ore dug from the site of the ancient city of Telmessus, was brought to this port last night by the Norwegian steamship Earnford, from Macri. The entire consignment is to be used in the manufacture of paint. The entire cargo was dug out of a huge amphitheatre, which historians say had a seating capacity of 20,000 persons. By volcanic eruption a large part of the town was destroyed and the earth in the vicinity transformed into a mass of ore, for which there is now a demand from all parts of the world.

DETROIT.

Special Correspondence to the Marine Record.

Capt. McMoran, who is raising the sunken schooner Sage, is said to have taken the contract at a flat figure of $5,000, and on condition that he completes the job successfully.

The contract for raising the small steamer Myrtle M. Ross, which sank at the Windsor dock, was given to Parker Bros. Operations for raising her were given over to diver Quinn.

Wrecking Master Harris W. Baker has commenced the work of unloading the cargo of pig iron on the schooner J. S. Richards, sunk in a collision with the steamer John W. Moore off Walkerville on the morning of August 1.

F. A. Kirby advocates improving the level of the Limekiln Crossing by placing a dam across the American channel at the old M. C. bridge. In this way, he says, the depth required in the Limekiln channel could be maintained.

Howard L. Shaw will be the name of the new steel freight boat now building at the Wyandotte yard of the Detroit Ship Building Co. for the Eddy-Shaw Co., of Bay City. It is likely that the steamer will be commanded by Capt. Shaw himself.

Capt. C. H. Sinclair, who represents the underwriters interested in the Fontana, says that as divers will be unable to patch the hole in the Fontana from the outside, some of the ore cargo will be removed and patching from the inside resorted to.

General Passenger Agent A. A. Schantz, of Detroit, says that the D. & C. did a larger business last Saturday than on any other one day during his connection with the line. Both boats to Cleveland and the upshore boat were crowded when they left the dock.

Harry Ripley, cook on the barge Sage, which sunk off Herson's Island, had to leave his pegleg behind in his scramble for life. He shinned up the rigging with his single limb, and is now at Toledo having a new leg made at the expense of the owners of the Sage.

The Canadian steamer Armenia was seized by Deputy Sheriff Rumbal, of Sandwich, in mid-channel, near Amherstburg, and towed to that port. The seizure was made at the instance of W. J. Pulling, an owner in the boat, who demands an accounting of the vessel's business.

The members of the Licensed Tugmen's Protective Association are sending a protest to the supervising inspectors of the steamboat inspection service against the appointment of Pleitz and Judson as local inspectors in the new district which takes in Toledo. The tugmen want the local officials to be residents of the district.

The time for the tug owners to accept the new wage schedule presented by the Tugmen's Protective Association will expire at midnight Thursday night. The owners say: "We will pay it if we have to." The chairman of the committee appointed to notify the tug owners did not indicate that the association had met with an enthusiastic reception from the owners. "If the scale is not accepted by Friday morning." said he, "the men will have to leave the tugs, and then we can tell more about what will happen."

Capt. McKay, seventy-five years old, an eccentric and wealthy vesselman from Anderdon township, near Amherstburg, Ont., went to Windsor this week and instructed a marble cutter to begin work on a tombstone, which he wants suitably inscribed and erected in the township cemetery. "I don't expect to live much longer," said McKay, "so I thought it a good idea to prepare for the end. I think it is well for me to arrange my own after-death affairs, as I am practically alone in the world. Don't want anyone to have any trouble over my bones, anyway."

The tug Marian Teller, which carried three men with her to the bottom of Lake St. Clair on the night of June 29, was raised this week by Duff Fecteau, assisted by Capt. Amhime Moisan, who is employed by the Beaubien Ice Co., and is a part owner of the tug. The tug was towed down to Clark's dock. The wrecking job was completed in three days. Diver Fecteau has carefully looked over the hull of the tug and stated that he could find no signs of a leaky hull. "No matter what anyone said about the tug leaking and putting out her fires," said Diver Fecteau, "I fail to find anything to bear out such a story. The hull is in fine condition. The tug must have foundered by shipping seas from above."

With the Gilchrist contract for five large steamers taken this week, the American Ship Building Co. now has in hand for construction the coming winter eight steamers, all over four hundred feet in length. Two and perhaps three of the Gilchrist boats will probably be built at South Chicago. That yard is now empty, the steamer Cornell, belonging to the Carnegie fleet, being just completed. The three other steamers are two for John Mitchell, of Cleveland, and one for D. C. Whitney, of Detroit. The latter ship will be 452 feet long, 50 feet beam, and 28 feet deep. This ship will be built at Detroit. The Mitchell boats will go to the yards at Cleveland. There are some other contracts in sight, it is said, but they have not been closed as yet.

A waterspout, which increased in size during the fifteen minutes it was in view on Lake St. Clair from a mere thread until it looked to be 150 feet in diameter, frightened the residents of the St. Clair Flats last Sunday evening. At about 5:30 o'clock a cloud in the shape of an inverted pyramid was seen to descend slowly about five miles from the Flats, until its point touched the water. It gradually became so large that great quantities of spray, where the whirling wind struck the surface of the bay, could be distinctly seen from the flats with the naked eye, while a continuous stream of foaming water, forming the center of the waterspout, was visible ascending directly into the clouds, only to be dropped again in the form of spray when out of the influence of the spirally whirling wind.

Col. Lydecker, Corps of Engineers, U. S. A., was asked this week what he thought of the proposition of the Deep Waterways Commission that a standard depth should be adopted for the improvement of lake channels, possibly twenty-one feet. Col. Lydecker said he was inclined to believe that there is a limit beyond which further excavation of the lake channels would not be worth while, the benefits to navigation from the increased depth not being sufficient to warrant the expenditure. He was inclined to believe that the limit for the lakes was now being approached, but whether it was at twenty-one feet or some other point he would not say until he had examined the surveys and data carefully. "The study of the physics of the Great Lakes has just begun," said he. "It is a great probem, and we have very much to learn, and conclusions should not be hastily arrived at."

So far as the re-survey has progressed in the St. Clair channel the engineers have found the channel fairly free from obstructions or shoal patches. The passing of so many vessels helps to preserve the depth. There are a few shoal places below the government canal and just above the Grosse Pointe cut where hummocks have been thrown up by the grounding of big boats and the consequent agitation of the water in the efforts to release them. The depths in these places are 17½ and 18 feet. "These places are being marked and will be properly improved," said United States Engineer Lydecker. "If heavily loaded vessels grounding in the canal would immediately lighter before attempting to work of, they would be released much quicker and the channel would not be disturbed. Where the wheels of the loaded steamers and those of wrecking tugs create such agitation as is necessary to release a steamer they cannot help but throw up the soil and create shoals in the channel."

The blockade of Lake Superior navigation by the stranding of the big steel schooner Maida in the rock cut, at Sailors' Encampment, will probably last the week out. The Maida is lying with her bow up stream, her nose shoved into the bank. There is six feet of water in her forward compartment, and the water bottom is also full, there is sixty feet of channel between the barge and the shore on one side. Boats drawing not over 14 feet can come up the old channel with the aid of tugs. Light boats can pass the wreck safely. The Matoa, which had the Maida in tow, did not stop and continued on her way. Capt. W. W. Smith, who has charge of the wrecking operations on the Maida, thinks that she will be released by Friday evening. The main hold and forepeak of the vessel are full of water and her pumps do not keep it down. It took five hours for the vessel to fill. The divers will probably have the holes patched up so that the steam pumps can be started on Thursday. As soon as the water can be lowered the work of lightering will commence. It will be necessary to lighter about 600 tons of the ore cargo, and this will be put aboard the schooner Cobb. Boats drawing a trifle over 14 feet can now pass the wreck safely. The Rappahannock and Pretoria got by drawing considerably more than that, but took great chances in doing so. It took three tugs to get the Pretoria over.

Henry C. Wisner, of the law firm of Wisner & Harvey, died this week of Bright's disease at his residence, 21 Madison Ave., after an illness covering a period of three years. Mr. Wisner was born in Pontiac, Mich., July 21, 1844, entered the United States naval academy in 1862, and graduated in 1866. It was the one great regret of his life that he could not be a member of the Loyal Legion, being disqualified for the reason that he was not a commissioned officer during the war. His record, as briefly summed up in the naval register, is as follows: Midshipman April 17, 1862; graduated June, 1866; ensign March 12, 1868; master March 26, 1869; lieutenant March 21, 1870; resigned April 17, 1873. In 1872 Senator Chandler secured for him a year's leave of absence. He came back to Michigan and studied law during that year, and when his leave expired he resigned his naval commission of lieutenant and opened a law office in Detroit. He was admitted to the bar April 4, 1874, and in 1877 Mr. Wisner formed a law partnership with John J. Speed, and in 1886 Frederick C. Harvey entered the firm, then called Wisner, Speed & Harvey. In 1892 Mr. Speed was appointed city attorney and withdrew from the firm, which Mr. Harvey and Mr. Wisner continued. Mr. Wisner was the son of George W. Wisner, once a prominent lawyer and newspaper man of Detroit. A widow and three children survive. The children are Mrs. Sewell Avery, and two unmarried daughters, Mary and Marguerite. Mr. Wisner made a specialty of admiralty practice. The most celebrated case he ever handled in the other courts was the Mabley-Spiers contest in the Probate Court about 15 years ago.

The committee of Congress on Rivers and Harbors reached here on their inspection tour on Friday night. The party which went down the river on the government boats Hancock and Search to inspect the Limekiln Crossing included Gen. R. A. Alger, William Livingstone, Henry Russel, Senator Martin, Congressman Henry C. Smith and Congressmen Burton, Dovener, Reeves, Lawrence, Bishop, Davidson, McCulloch, Alexander, Acheson, Bankhead, Sparkman and Lester. Col. Lydecker was in charge, and Capt. McKay, the Lake Carriers' chairman of the aids to navigation committee, accompanied the party. In the meantime the ladies of the party, under the escort of Mayor Maybury, Hon. George H. Barbour and Hon. Elber W. Cottrell, were taken around the city on a trolley car, and later given a ride around the island. They were returned to the Fessenden at 2 o'clock in time to take the boat for the Flats The plans all worked out to a splendid success. The government provided the Fessenden to the party to the Flats and then the Northern Steamship line did its part by giving Capt. Minor permission to stop the North West and pick the party up at the Star Island house. The members of the party which sailed on Saturday for the up lake tour were United States Senator and Mrs. Thomas S. Martin, Congressman Theo. E. Burton, Congressman and Mrs. Walter Reeves, Congressman and Mrs. B. B. Dovener and Mr. W. Dovener, Congressman and Mrs. R. P. Bishop and Mrs. Maybee, Congressman and Mrs. E. F. Acheson, Congressman and Mrs. Page Morris, Congressman and Mrs. De Alva Alexander, Congressman George P. Lawrence, Congressman and Mrs. J. H. Davidson, Congressman and Mrs. R. E Lester, Congressman and Mrs. J. H. Bankhead, Congressman and Mrs. S. M. Sparkman, Congressman and Mrs. P. D. McCulloch, Col. and Mrs. Willis L. Moore, Gen. Henry H. Bingham, M. C., Capt. J. S. Dunham, Commodore George W. Gardner, Hon. Harvey D. Goulder, Capt. A. W. Colton, Capt. George P. McKay, Congressman Edger Weeks, E. W. Cottrell, J. Sherwood, and Secretary Keep of the Lake Carriers. The others of the party who accompanied the committee from Cleveland did not go north of this point.

CHICAGO.

Special Correspondence to The Marine Record.

Grain rates continued steady at 1½ cents on corn to Lake Erie.

All that remains of the excursion steamer Chief Justice Waite will go to fill up the basin adjoining Lake Front park.

The vessel loaders of Cedar river have organized a branch of the Longshoremens' Union, and have adopted a scale asking for 55 cents an hour.

Messrs. Mangle & Holcomb, Chicago dealers in railroad ties, have leased dockage on the north side of the Belt Line slip at Waukegan and will operate a tie-receiving dock there.

Grain freights were slow at 1½ cents on corn to Lake Erie, on Wednesday. Some shippers claimed the same rate was made on wheat as on corn, which would indicate a drop of ⅛c. but no charters for corn at 1⅜ cents were made so far as could be learned.

The announcement of the sale of the ore of the Stephens mine at Duluth by Rockefeller's company, the Lake Superior Consolidated Iron Mines, to the Carnegie Steel Co., attracted much discussion here, and especially the terms of the sale by which the Lake Superior contract ore rate is fixed at a figure close to seventy cents for this ore.

While going up the river shortly after noon, Wednesday, in tow of the tug William Dickinson, the steamer Frank Rockefeller rubbed against the steamer Juniata lying at Northwestern dock, and sheered into State street bridge, knocking out seventy-two feet of sidewalk on one side. The Rockefeller was without cargo and was hard to manage in the current. The bridge was opened to let the steamer through and a number of people were on it when the accident happened, but fortunately no one was injured though all were badly scared.

The dullness that has prevailed in the lumber market throughout the present year and particularly in Chicago has had a peculiar effect on the statistics of the lumber movement from the northern mill or producing points by reversing the figures on all rail and lake. An estimate of the movement into Chicago this year makes the total 200,000,000 feet by lake and 800,000,000 feet by rail, as against 800,000,000 feet by lake and 200,000,000 feet by rail last year. It is understood that these are round figures but all rail has greatly discounted traffic by lake so far this summer and is now likely to continue to hold that record.

An admirable feature is to be added to the department of instruction of the University of Chicago consisting of a museum of commerce. The new class will embrace all the main principles, theories and practices of trade and active commercialism. The trustees and authorities of the Midway school some time ago decided that trade and the features of commercialism should be a matter of education and for that purpose material is being collected, and it will be put into actual use as soon as secured. Money has been appropriated and the committe in charge has taken steps to put the new school on a solid basis. The museum will be a feature in itself. A similar one is already in existence on a small scale at the University of California and another is maintained at Philadelphia, as a reminder of the pan-American exposition.

Experimental work has been going on for some time at Milwaukee, Wis., on a submarine boat of the Raddatz type, and those conducting it seem to be pleased with the results. When cruising on the surface the boat is driven by an oil engine of about ten horse-power, which is capable of giving the vessel a speed of from six to seven miles an hour. When submerged the boat is driven by an electric moter led from sixty-two cells of storage battery, and giving speed of four to four and a half miles. The boat can in from thirty to forty seconds sink to a depth of forty feet. The ascent is made just as quickly. It is claimed that three men could remain below the surface eight hours, and two men at least twelve hours without any inconvenience; this in the small experimental boat and cigar-shaped. The boat carries its own supply of compressed air.

LA PUISSANTE, THE LARGEST DREDGER OF HER CLASS AFLOAT.

During the past month dredging and steaming trials have been carried out on the Firth of Clyde with the hopper dredger La Puissante, the latest production of the dredger building firm, William Simons & Co., Limited, of Renfrew, Scotland, and notable as the largest and most powerful stern-well bucket-dredger in the world. This vessel has a hopper capacity for no less than 2,200 tons of dredgings and a lifting capacity of 1,800 tons per hour. She has been constructed to the order of the Suez Canal Co. for the improvement of Port Said roads, and measures 275 feet on deck line, or 266 feet between perpendiculars, 47 feet breadth molded, and 19 feet depth molded. Her hull is constructed of mild steel and is subdivided into 13 water-tight compartments by means of eight bulkheads, carried up to main deck.

The bucket ladder, with its chain of buckets, each of 30 cubic feet capacity, weighs, without dredgings, 120 tons, and works through a well at the stern, and has a maximum dredging depth of 40 feet in moderately rough weather. The minimum dredging depth is only limited by the draft of the vessel—that is to say, the vessel can cut her own flotation. Her draft, loaded, is 16 feet 5 inches. For altering the trim of the vessel a trimming tank is fitted forward, and two ballast tanks are fitted along each side of the hopper space, all being fitted with the requisite piping, valves, etc., for rapid filling and emptying.

The hopper space is one large compartment situated amidships forward of the ladder-well and engine and boiler space, thus obviating the necessity of having long tunnel shafting through hopper. The hopper doors are built of steel channels, plated top and bottom, and filled in solid with greenheart. The winches for raising the hopper doors are arranged to be worked by either steam or hand power, and friction gear is provided to prevent accident should the doors by any chance become fouled. The hopper door chains are carried over large pulleys fixed in wrought iron brackets and having regulating screws, the whole being carried on cross and fore and aft girders. All the lifting gear for hopper doors is under the control of one man stationed on deck.

The bucket ladder is suspended from the sheers by a 10-sheave wire rope purchase, and it has buffer springs fitted at its upper end in order to lessen the shock when working in a seaway. Powerful hoisting gear, fitted with friction-brake apparatus for hoisting and lowering, is arranged to raise the ladder at two speeds—one of 7 feet and the other 13 feet per minute from large, independent steam engines. The dredging gear is arranged for two speeds of 16 and 20 buckets per minute, and consists of steel bevel and spur gearing of massive design. The engines which propel the vessel are also capable of driving the dredging gear. For manœuvering the vessel a combined winch and windlass is fitted forward, and a specially powerful and very massive winch is provided aft. Each winch has two speeds—one for dredging and one for taking in slack chain. Two wide shoots are provided, having hinged doors at intervals for the even distribution of the dredged material in the hopper, and barges can also be loaded when lying along either side of dredger by means of shoots having steam purchase for raising and lowering.

La Puissante is provided with a powerful combined steering gear, which can be worked either by steam or hand. There is bunker accommodation for about 80 tons of coal, besides independent tanks for petroleum fuel. Accommodation is provided at forward end for the superintendent and officers, handsomely fitted up, while accommodations for the crew, embracing native as well as European quarters, is made on each side of the well. The electric light is installed completely throughout, while efficient ventilation and lighting are provided by large cowl-head ventilators and sidelights in all cabins and engine and boiler spaces. All the compartments have lofty ceilings, and are otherwise specially arranged for comfort in hot climates.

For propelling the vessel there are two sets of independent, compound, triple-expansion, surface-condensing engines of an I. H. P. of 1,800 combined. The cylinders are 17, 27 and 43 inches diameter, and the stroke 27 inches. Steam at 160 pounds working pressure is supplied from two mild steel, multitubular boilers, each 14 feet 6 inches diameter by 11 feet in length, and having three furnaces 44 inches inside diameter. With this machinery the builders contracted to supply a dredger of nine knots speed. A unique feature in the arrangement of the propulsive machinery as concerned with a vessel of this special type consists in the boilers having one common stokehold, arranged aft of the engine space, adjacent thereto and both aft of the hopper space. With this arrangement the engineer in charge has full control of engines and boilers without requiring to go on deck. The auxiliary machinery in engine room includes separate Duplex, of Blake-Knowles type for boiler-feeding purposes, and one large, horizontal Duplex pump of same type for ballast tank and bilge purposes, and also for supplying water to assist the dredged material along the shoots. Combined feed-heater and filter and steam starting, turning and reversing engines are also fitted in engine room.

INSTRUCTION IN ENGINEERING.

In his presidential address before the Society for the Promotion of Engineering education, Ira O. Baker submitted the following table, in which the returns for eighty-nine institutions giving instruction in the different branches of engineering, are added together, regardless of the grade of the institutions, shows first the number of courses in such institutions offered in 1898-99; secondly, the number of students in engineering in 1898-1899, and, thirdly, the number of engineering graduates in 1899:

	Institut'ns offering Courses.	Number of Students.	Graduates in 1899.
Civil engineering	67	2,667	419
Mechanical engineering	61	3,293	480
Electrical engineering	49	2,397	370
Mining engineering	21	860	78
Architecture	15	389	56
Naval architecture	2	54	9
Sanitary Engineering	2	19	1
Total		9,679	1,413

DOMINION IMPORT DUTIES.

An import regulation governing shipping from Europe by the St. Lawrence route has been issued by the Dominion Customs Department. The customs act provides that the value for duty shall be the fair market value of goods when sold for home consumption in the principal markets of the country whence imported direct to Canada. This word "direct" has been somewhat loosely interpreted in the past in the case of British and Continental goods imported through United States ports. It is the intention of the Customs Department now to apply the law relating to direct importations more strictly, and to require that the evidence of goods brought from Europe to Canada via the United States being a direct importation shall be clear and conclusive. It is expected that the new regulation will promote trade via the St. Lawrence, as there can be no question of importations by ocean steamers to a Canadian port being direct. Hereafter European goods coming into Canada through the United States will be valued for duty as though imported from the United States, and duty will be levied on the open market value in that country, unless the bill of lading clearly shows the goods to have been consigned from Europe to an importer at a particular port in Canada.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	2,087,000	315,000	244,000	.....	26,000
Chicago	10,943,000	1,546,000	1,755,000	338,000	5,000
Detroit	170,000	171,000	12,000	23,000	1,000
Duluth	7,773,000	406,000	56,000	43,000	48,000
Fort William, Ont.	1,223,000	.....	.....	.....	.....
Milwaukee	915,000	130,000	117,000	3,000	11,000
Port Arthur, Ont.	73,000	.....	.....	.....	.....
Toledo	884,000	639,000	282,000	19,000	.....
Toronto	22,000	.....	6,000	.....	.....
On Canals	58,000	1,238,000	67,000	.....	.....
On Lakes	1,610,000	2,266,000	442,000	.....	.....
On Miss. River	.....	.....	.....	.....	.....
Grand Total	48,218,000	11,351,000	5,869,000	625,000	350,000
Corresponding Date, 1899	36,306,000	10,181,000	3,887,000	572,000	361,000
Increase	624,000	.....	284,000	5,000	.....
Decrease	.....	969,000	.....	.....	42,000

While the stock of grain at lake ports only is here given. the total shows the figures for the entire country except the Pacific Slope.

THE Secretary of the Navy has issued to shipbuilders a circular calling for bids for the construction of six armored cruisers, three authorized by the act of March 31, 1899, and three by the act of June 7, 1900.

NOTES.

SCALE is generally removed from boiler flues by "rattling" them in a tumbling barrel or by machines to cut through the deposit and grind it off. An improved and very convenient method used at the Sayre shops of the Lehigh Valley is recorded by the Railroad Gazette. The flues are heated to a cherry red in a long furnace and then dropped into cold water. The difference in the contraction of the tube and the scale causes the scale to crack off and leave the tubes. It is found to be cheaper than the other methods at Sayre.

THE Transatlantic Society of America has been organized at Philadelphia. Its object is to promote more amicable relations between the United States and the British Empire. There are three classes of members—active, associate, and honorary. Active membership will be confined to citizens of the United States; associate members will consist of British subjects resident in the States; and honorary members will be admitted at the discretion of the council, Mr. C. Stuart Patterson is the president. Mr. Archibald J. Houghton, one of the organizers of the new movement, stated to an interviewer from the British American, of Philadelphia, that "the Transatlantic Society of America has been organized for the purpose of bringing into closer relations the people of the United States and the British Empire, by encouraging a reciprocal exchange of courtesies, and by the general strengthening of the political, social, and commercial bonds that unite the two countries."

GENERAL GREELY, Chief Signal Officer of the Army, left Washington July 31st for Alaska where he will personally supervise the arrangements being made by his corps for the construction of cable and telegraphic communications between that country and the War Department. It is believed as quite likely that General Greely will make arrangements with the Canadian Company for the transmission of messages until government lines can be constructed. The system of telegraph and cable lines which it is proposed to have between this country and Alaska will be of the greatest credit to the Signal Corps and will serve to bring the War Department and the Military Department of Alaska into close touch. Officers of the corps have been for some time at work mapping out this system and much has already been done by the detachment of corps stationed at Alaska. As will be remembered, the last session of Congress appropriated $420,000 for telegraph lines in Alaska.

THE new torpedo-boat destroyer, H.M.S. Viper, built by Hawthorn, Leslie & Co., Newcastle, England for the Parsons Steam Turbine Company, has made a record speed at her trials, and has established herself as by far the fastest vessel afloat. The Viper is 210 ft. long, 21 ft. beam, and 12 ft. 6 in. deep, 380 tons displacement, and is propelled by steam turbines designed by Parsons. There are four independent screw shafts, each with two propellers, and each driven by turbines. As the steam turbine cannot be reversed, each shaft has a turbine for working astern. The boilers are of the Yarrow type. The weight of machinery is 35 lbs. per indicated horse-power, as compared with 55 lbs. for the usual type of reciprocating marine engines. At her trial runs on the Tyne the Viper attained a mean speed on six runs of 36.58 knots per hour, which is about 42½ statute miles per hour. The steam pressure carried was 200 lbs. per square inch, and the mean revolutions were 1,180 per minute The air pressure in the stokeholds was 4½ inches. The engines worked with perfect smoothness.

THE Glasgow Herald states that the shipbuilding industry in Scotland, and more especially on the Clyde, has rarely if ever been in a more peculiar position than at present. Were it not for the fact that Mackie & Thomson, Govan, received from the Shire Steam Fishing Co., Aberdeen, an order to build three trawlers, at an aggregate cost of £21,000 the month of June would have passed without the publication of one contract in the whole of Scotland. Other new work may have been placed, but if so, it cannot have been very important, or in the prevailing dearth of orders, it would have come to the public. The monthly table of contracts, which has been fluctuating greatly since the new year, is now within one order of vanishing point. In January nearly 30,000 tons were placed, in February only 1,500 tons, in March 1,500 tons, in April 25,000 tons, in May 22,000 tons and June dropped to some 600 tons. It is the old story, which has been expressed time and again within the past six months; dear coals, dear steel and dear labor, resulting in empty berths, with prospective idleness for the worker and a sudden fall in prices of those things which are causing the present scarcity of contracts.

WYOMING'S WEALTH OF IRON ORE.

Writing from Guernsey, Wyo., William E. Curtis reviews in the Chicago Record the iron prospects of that locality. He says:

As long ago as 1852 rich iron deposits were reported in this vicinity and were afterwards thoroughly explored by the agents of the geological survey, but no practical use was made of them until 1889, and then they were so far from a railroad that a comparatively small amount was shipped to market. This was hauled by ox teams 115 miles to the nearest railway point and from there shipped to the smelters at Denver and Pueblo. In 1893 a collection of the ores was sent to the World's Fair and created a decided sensation among mineralogists and furnace men. This brought into the country a large number of prospectors, evidences of whose industry are seen on the mountain sides in every direction.

At this time C. A. Guernsey, with the assistance of wealthy friends in Chicago and New York, organized a company which bought up every promising prospect, and few miners turned the turf without finding abundant evidences of ore. Mr. Guernsey and his friends bought everything in the way of prospect holes within a radius of eight or ten miles of his ranch. Hence they now control a belt of remarkable deposits covering an area of not less than thirty square miles, in the center of which is the city he has waited so long to see. He owns not less than seventy-five different claims, which he has purchased directly from the original locators.

This gives him the control of every valuable property within the area described, which experts believe to contain the largest deposit of high-grade Bessemer steel ores to be found on this continent at least, and probably in the world. The ore lies in mounds on the surface of the earth and is mined with steam shovel and scrapers, such as are used in building railway grades and digging canals. Shafts have been sunk in several places to a depth of 150 feet and have shown solid masses of ore from the grass roots down—both carbonates and rich red oxides, which stain everything they touch and were used by the Indians for paint. The amount of ore in sight has been variously estimated from 25,000,000 to 50,000,000 tons, and so far as the shipments have gone, they have averaged from 63 to 70 per cent. of free metallic iron.

Three years ago the Colorado Fuel & Iron Co., which has extensive furnaces and mills at Denver and Pueblo, with a capital of $25,000,000, constructed a railway from the Colorado Southern at Badger, Wyo., to the mines and obtained a lease of what is known as the "Sunrise Park group" for twenty years from Mr. Guernsey. Under the terms of this lease the company are required to take out not less than 500 tons per working day, or 150,000 tons for the first year. This minimum must be increased 25,000 tons a year until the output reaches 1,000 tons per day. At present the company are taking out between 600 and 700 tons from the side of a hill with a steam shovel which carries two tons to the dip and can load an ordinary gondola in eight minutes. When the terminal facilities which are now under way are completed, at a cost of $350,000, they will be able to handle 2,000 tons a day. That is the amount required to keep the furnaces at Denver and Pueblo running their full capacity. Mr. Guernsey receives a royalty of 15 cents a ton for all the ore that is taken out of the mines.

The mine as we saw it today looked like a gravel pit, except that its contents were a brilliant vermillion, the reddest ore I have ever seen. A great pit had been dug out of the side of the mountain and a double railway track had been laid beside it. A gang of men with crowbars were ranged along the upper rim breaking off great chunks of ore, which fell like avalanches into the bottom of the pit, where it was scooped up by a steam shovel and hoisted over into the freight cars on the outer track. The air was hazy with an almost invisible red dust that settled upon one's hat and clothing and if allowed to remain left an indelible stain. Superintendent Butler explained that the ore then being taken out was a high grade of carbonate running from 62 to 66 per cent. pure iron, and asserted that the mountains all around us on both sides of the canon for two miles were composed of similar material, which could be mined in the same manner at a cost of not less than 35 cents a ton.

It is expected that the Colorado Fuel & Iron Company will sooner or later remove their smelting plant to Guernsey, which is admirably situated for such enterprises because of the presence of almost unlimited water power.

A SHIP with two mates but no captain.—Courtship.

THE PANAMA CANAL.

Recent letters at the Navy Department from Panama are to the effect that work on the Panama canal is being pushed with greater vigor and earnestness than at any time since its inauguration. Thousands of laborers are now at work, and machinery, brought mainly from France and Belgium, is being installed in larger amount than ever before. It is evident from all the information at hand that the Panama canal people are not going to permit the Nicaragua Co. to have a walk-over in the matter, but the most strenuous exertions must be put forth if the latter company is to make real headway against the already partly completed Panama canal.

Our enterprising French contemporary, the "Armee et Marine," had in a recent issue copious illustrations of the progress of the work. Until one sees such a photographic record of the development of this enterprise, it is hard to grasp the magnitude of the undertaking and the steady advancement that has been made. The two chief difficulties in the way of the Panama engineers are the Cordillera range and the Chagres river. Because of the mountains, a sea level watercourse would necessitate a depth of the excavation of more than 350 feet. Even with locks the depth would have to exceed 270 feet. The torential rush of the waters of the Chagres would prove a great danger to the canal unless extensive defences are made for it.—The Army and Navy Journal.

MARINE RAILWAY AND DRY DOCK.

Within the next forty or sixty days ground will be broken at Norfolk, Va., for a marine railway to cost $250,000. The projectors also contemplate beginning work within a year upon a dry dock capable of holding ships of the largest size. J. A. C. Groner, secretary and treasurer of the company, has blue prints and specifications for the plant, which show that three piers, 1,300, 1,000 and 900 feet long, respectively, and 20 feet wide, are to be built. Between those a marine railway upon which vessels not exceeding 3,000 tons register may be hauled out, is located.

The officers of the company which will undertake this work are: H. W. Anderson, shipbuilder of Bath, Me., president; Walter H. Doyle, of Norfolk, vice-president, and J. A. C. Groner, secretary and treasurer.

Mr. Groner says that $50,000 has been paid in by those interested, among whom are all the large transportation companies here. And two New York trust companies will furnish the $200,000 additional required. There will be at the piers a depth of water of 27 feet, and to secure this dredging to cost about $8,000 will first be done.

A marine railway repair shop, saw mill and shipbuilding plant and dry dock are badly needed here and will be highly profitable.

COAL IN ALGERIA.

While statisticians, economists, and others are discussing the shortage of coal in European countries, due to this or that cause, it may be well to note that the London Daily Mail calls attention to recent discoveries of coal in various parts of Algeria. Lignite has also been discovered. The quality of coal found in Algeria cannot be compared to the Welsh product, but, says our contemporary, it is not inferior to some Scotch coals. If it can be extracted in sufficiently large quantities, there is no doubt that most of the works, etc., which at present use Scotch coal will in the future exclusively patronize the Algerian mines, as it can naturally be supplied at a much lower figure. The greatest disadvantages that Algerian mine owners have to contend with is the difficulty of transport, but several lines will shortly be commenced, which will open up the country and result in a great many mines being worked which at present are lying idle. Labor is very cheap, as hords of Moors and Kabyles wander all over the country in search of work, and, as a rule, water is plentiful. Algeria has certainly a great future before it as a mineral producing country, and if the colonists and capitalists would only recognize the fact that it would pay them much better to invest their capital in the country than in French securities, Algeria would soon rise to the position of a paying colony, which it certainly is not at present.—Bradstreets.

THERE is much activity about the Crescent shipyards at Elizabethport, N. J., where 1,000 men are now employed. Twenty-three vessels are on the ways and the machine shops are running night and day. Rush orders have been received for three more submarine boats of the Holland type. This makes five that the company has orders for.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Breach of Contract.—It is no defence to a suit for damages for the breach of a contract made by a bill of lading to transport goods by a particular vessel that the carrier afterwards forwarded the goods by another vessel without additional cost or risk to the shipper. The Protection, 102 Fed. Rep. (U. S.) 516.

Recision of Contract of Carriage—Transfer of Bill of Lading.—After a bill of lading made negotiable by statute has been assigned by the shipper for value to another, the contract thereby made cannot be rescinded without the consent of the assignee, and the issuance of a second bill of lading to the shipper, without the surrender of the first or the consent of the assignee, cannot affect his rights under the first contract. The Protection, 102 Fed. Rep. (U. S.) 516.

Carriers—Breach of Contract to Carry Goods—Defenses.—Representations made by a shipper as to the size and weight of a machine to be transported, although not correct, are no defense to a suit against the carrier for its failure to carry such machine on a particular vessel, in accordance with the terms of a bill of lading which was issued afterwards, and after the carrier's agents had seen the machine, and had opportunity to obtain full information as to its dimensions and weight. The Protection, 102 Fed. Rep. (U. S.) 516.

Admiralty Practice—Effect of Variance—Amendment of Pleading.—In the courts of admiralty of the United States there are no technical rules of variance which will prevent a recovery by a libelant who shows a meritorious case, but under the liberal and equitable practice as to amendment he will be allowed to amend his pleading at any stage of the case to conform to the evidence, even to the extent of changing a libel for a tort to one based on contract, where he has mistaken his legal rights, and the allowance of such amendment will work no hardship to the defendant, and is in accordance with the principles of equity and natural justice. Davis vs. Adams, 102 Fed. Rep. (U. S.) 520.

Suit by Seaman.—Libelant brought suit in personam to recover damages for alleged forcible detention on board a vessel by defendant, where he was induced to go through false pretenses, and for services rendered while so detained. The evidence showed that he went on board under shipping articles which he had voluntarily signed, and by which he was bound, but that he was wrongfully forced by the master to leave the vessel at a distant port, in violation of such articles, and refused any payment for the services rendered; and also that he suffered other wrongs and mistreatment at the hands of the master which gave him a right of action in personam against the defendant. Held, that he should have been permitted at the close of the case to amend his libel to state his cause of action as disclosed by the evidence. Davis vs. Adams, 102 Fed. Rep. (U. S.) 521.

Salvage—Distribution of Award.—Libelants and respondents were associated in an enterprise to raise a sunken ship, to which libelants contributed the services of two tugs; the work to be done under the superintendence of one of the respondents, and the proceeds to be divided. After the enterprise had been entered upon, and the tugs were proceeding to the locality, one of them, temporarily in charge of the superintendent, discovered a schooner aground, and, under the direction of the superintendent, rendered salvage services in effecting her release. Held, that such services were entirely apart from the common undertaking; and the award therefor should be distributed between the owners and crew of the tug and the superintendent in his individual capacity, unaffected by the agreement under which the wrecking operations were being conducted. The Cavalier, 102 Fed. Rep. (U. S.) 527.

Shipping—Measure of Damages for Loss of Cargo.—A steamship company issued a bill of lading by which it contracted to transport a machine by a particular vessel from Seattle to Skagway, Alaska, which bill was indorsed to libelant, who proceeded to Skagway to receive the machine on arrival. The vessel, however, did not bring it, but it was forwarded by the company by another vessel, a month or so later, at which time libelant was not there to receive it, and it was entirely lost to him. Held, that as the usual rule that the measure of damages for loss of goods is their market value at the port of destination could not be applied, because of the impossibility of showing the value of the machine at Skagway, libelant was properly allowed as damages its cost at Seattle, together with his expenses in going to receive it and the freight paid. The Protection, 102 Fed. Rep. (U.S.) 516.

THE first steel ever exported from the south has just been forwarded by the Tennessee Coal, Iron & Railroad Co. from its Ensley steel mill to Copenhagen and Glasgow. The shipment to the former city was 25 tons of billets and to the latter 30 tons of ingots. Vice President James Bowron, of the Tennessee Co., is now in Europe, and his order for these trial shipments has been forwarded. The sales were made below European figures. Export pig movements are increasing rapidly, upwards of 30,000 tons having been forwarded this month.

THE Cramps have the hands, the brains and the means to build the fleetest and staunchest warships in the world, and if they are outclassed in this respect by rival nations, it will be nobody's fault but their own.

MARINE RECORD

ESTABLISHED 1878.

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CLEVELAND, O., AUGUST 16, 1900.

INSPECTING LAKE PORTS.

The Rivers and Harbors Committee of the House are making a tour of all the ports of the lakes, having started August 8.

Nothing could better impress upon the ninds of this committee the necessity for government work at most of the lake harbors than to see for themselves the traffic which, while yearly increasing, is also suffering for want of better facilities along the lines of improvement which are directly in charge of the government.

On its trip the Committee will be shown these necessities, also how great lake harbors are made. The Milwaukee Daily News very pertinently observes that to some of them it will be a new sight, for comparatively few of the population of the United States know of the work which is constantly being done at the lakes.

To learn how lake harbors are made is to learn of great mechanical inventions, of skilled labor and of notable industries. Like in all departments of work where genius and experience travel hand in hand there is a notable evolution incidental to the passing of years.

To build a harbor suitable to the lake commerce of to-day requires millions on millions of money. These vast sums must be expended by the great companies operating at these ports, by the United States government, and by the city in which the harbor is located.

The government builds the piers at the entrance to a harbor, places light-houses thereon, digs the main channel into port and constructs breakwaters out in the lake.

Dock companies dredge their own channels leading from the main river and construct their own docks. All this must be done before machinery and other facilities can be utilized and before connecting railroads can receive a pound of the products which are carried by water.

Channels are constructed by means of dredging. There are dredges for soft earth, dredges for hard and stony earth and those built especially for removing rock. All of them are massive machines, requiring a large crew of men to operate them. They work rapidly, but it must be remembered that it takes a long time to remove enough of earth to allow a vessel drawing 18 feet of water to enter a comparatively shoal port safely.

The dredges are also used in dredging away bars which form usually by the action of the waves at the entrance to a harbor. To remove these bars is the work of the government. When such obstructions are not attended to at once, great damage usually results to vessel interests and to all concerned at the various harbors.

When they strike a bar much time is consumed in getting them off, and besides they are liable to be in the path of other vessels wishing to come in, to say nothing of the damage that may result to the vessel herself from going aground. Therefore vessels will often lay outside the piers for two or three days rather than run such risks. New breakwaters to be built at several lake ports will have the effect of remedying much of this difficulty. Government dredging and building of additional breakwaters is the great demand of the lakes to-day.

Pile driving, next to dredging, is the most important work in the construction of a harbor. Channels can only be maintained when the work at either side is held from caving in. This is accomplished by driving strong posts or logs called piles into the ground and then bracing them by heavy strips fastened by bolts from one pile to another.

In constructing docks piles are also necessary. They are usually driven in in two or three rows not far from each other. The depth which they are driven depends upon the ground into which they must go. An average depth is 40 feet. Piles are driven by means of a machine known as a pile driver. These machines stand from 60 to 100 feet high. They lift the pile, put it in place, and then from the extreme top of the machine a weight of some 2,500 pounds drops. This weight strikes the end of the pile about twice a minute, driving it deep in the ground, as the operation is repeated many times. The weight or hammer is drawn back to the releasing point by means of a cable operated by an engine. As the heavy weight drops for a distance of nearly 100 feet it naturally gains considerable velocity, which serves the better to drive the piles.

Breakwaters and piers are built first by sinking what are known as cribs to the bottom of the lake near shore, and on these a superstructure is built. Cribs are made on the plan of large boxes, which when completed are sunk by filling them with stone. Breakwaters are built a few hundred feet from the ends of the piers. In time of storm they break the force of the waves and thus a vessel can pass into port between them in safety.

The evolution in harbor work is particularly noticeable in breakwater building. In the future they are to be built entirely of stone or concrete. This will make them more durable and will on account of the different angles on which they are being built decrease the possibility of bars forming near the piers.

ANOTHER BLOCKADE IN "SOO" RIVER.

The large steel schooner Maida, bound down, in tow of the steamer Matoa, and loaded with a cargo of iron ore, parted her wheel-chains when abreast of the Sailors' Encampment in St. Mary's river on Tuesday afternoon and went aground across the channel, completely blocking navigation.

The Maida brought up in almost exactly the same position where the steamer Douglass Houghton was sunk across the channel last year. This wreck delayed commerce on Lake Superior and cost the business interests over a million of dollars. The Maida struck the rocks on the side of the cut with such force that her bow is stove in and her forepeak is full of water. No boats can get through this route until the vessel is lightered off. If prompt and adequate assistance is furnished traffic can be resumed before the end of the week, although good authorities quote at least a week's job in releasing the big 5,000 ton schooner, or consort as these craft always tow.

AMERICAN SHIPBUILDING.

The Newport News Ship Building Co. will bid on five battleships, and may also bid on the armored cruisers. Mr. Huntington says the new steel plant under contemplation at the Newport News yards will cost $1,000,000. The site selected is opposite the shipyard. Another steel ship crane will be built, which will give the company facilities for building two more large ships. The big dry dock to accommodate 700-foot ships, will be ready in December. Mr. Huntington says the prospects for shipbuilding are very favorable. "We have not the merchant marine we should have," he says, "and the day must come when we will take rank as one of the leading nations in this respect. To do this we must build ships. American shipyards should be kept busy for some time to come."

FOR facilitating the welding of two pieces of iron or steel M. A. Cherbonnier, of Paris, prepares plates made from a composition of borax and iron filings, strengthened by a web of iron-wire mesh. The plates are also indented by lines crossing one another at right angles, so as to permit of a piece being broken off readily to suit the surface to be welded. It is found by experience that with these plates the weld is far sounder than can be obtained without them. and also that the metal can be welded at a far lower temperature, which is of great importance in the case of steel.

REVENUE CUTTER MACKINAC.

John W. Collins, chief engineer of the revenue cutter service, Washington, announces that the Great Lakes will soon have a revenue cutter named Mackinac. The cutter is now being built at the shipyards of the William P. Trigg Ship Building Co., Richmond, Va. The agitation to name a cutter after the beautiful island was started at Milwankee about a year ago and was endorsed by Secretary Long, of the Navy Department, and Senator McMillan, of Michigan. Several of the Wisconsin congressmen fell into the scheme, and through the aid of these officials the cutter was named Mackinac.

LUMBER PRODUCTION.

The present generation need have no fear that the United States will run short of timber during its lifetime. Well informed lumber experts claim that the forests of California, Oregon and Washington contain at least 75,000,000 feet of uncut timber. These magnificent forests contain at least 75,000,000 feet of uncut yellow and red fir. Oregon alone can boast of 25,000 square miles of valuable timber. The forests of Washington contain more timber than all the pine forests of Michigan and Wisconsin combined contained before the axe of the woodman had cut a single tree.

VESSELS CLASSED.

Vessels classed and rated by the American Bureau of Shipping in the "Record of American and Foreign Shipping" since our last report:

Screw City of Antonio; screw Hudson; three-masted screw Helena; three masted schooner Emily F. Northam; barkentine Hancock; British schooner Demozelle; British three masted schooner Benefit.

THE great success of the Flushometer has brought a large number of imitations into the field. The counsel for the Kennedy Co. have advised that these imitations are undoubtedly infringements on the patents under which the Flushometer is manufactured, with the result that suits against several of the infringers will shortly be commenced. Proceedings are also contemplated against manufacturers who are using on their goods names similar to the word Flushometer, the use of which names, the Kennedy Co. claims, is an infringement of their trade mark rights, and constitutes unfair competition.

LETTERS AT DETROIT MARINE POST OFFICE.

August 15, 1900.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Allen, Captain
Bidgood, A.M., Queen of West
Burns, John, Hesper
Clark, W. A., Neshoto
Corsant, R. M., Curry
Casey, Thos., Uganda
Cotterill, R. L.
Cummins, Ed. T., Mackinac
Condon, Patrick
Currie, John N., 2, Langell
Dorland, Mrs. Hattie, Vulcan
Dove, Frank, Ogemaw
Elliott, Capt. Frank
Fox, Fred., Wyoming
Galloway, Wm., Ionia
Gilbert, Henry, Perew
Graham, Fred. M., Checotah
Gaskell, Stephen H.
Humphrey, Jennie
Henry, Walter S., Saveland
Harrison, H., O. Jeannette
Hathaway, Harry
Hunter, W. J., Kaliyuga
Heck, Robert, Curry
Inglesby, Joseph
June, Charles, Eureka
Johnston, Frank, Mingoe
Kerr, Thos.
Keppard, Frank, Italia
Lowry, John, Schoolcraft
Maguire, Martin, Hesper
Mastin, Alvord, 3, Armour
McPhail, Chas. A.
Macfarlan, A. A., Tom Adams
McLeod, Alex.
McCallum, Peter
Nester, M. J., G. Stephenson
Parker, Angus
Powell, John, D. Houghton
Perkins, Frank, Stevenson
Petty, Geo., Chicago
Reasner, J. C.
Roberts, H. P.
Rapin, Ed. J.. 2, Bangor
Rowe, Michael, A. P. Wright
Rock, Willson
Sankiur, Phil., A. P. Wright
Shields, Ed., Ogemaw
Stevens, M. M.
Scott, Miss Wanda J.
Switzke, Leo., A. P. Wright
Tullis, Charles, Waverly
Thomas, William, Castalia
Walder, Wm., J. E. Owen
Wilson, Geo. E.
Williamson, Enoch
Williams, W. T.

F. B. DICKERSON, P. M.

THE unwisdom of Congress in refusing to increase the Marine Corps is now made apparent. The force in this country is now so reduced that there are only about 1,000 left to draw upon for further emergencies, as the corps is nearly 1,000 short of its authorized strength, taking into account the marines at Pekin, whose fate is in doubt. As we have heretofore stated, the Army supplies will be drawn upon for subsistence, forage and fuel of the marines serving with troops.—the Army and Navy Journal.

KINGSTON, ONT.

Special Correspondence to The Marine Record.

Buffalo steamboat inspectors recently looked over the new steam yacht Ramona and other Kingston passenger steamers.

The steamer John Milne, owned by Mr. Foster, Smith's Falls, was in Davis' dry dock to have her shaft straightened, engines repaired, etc.

The steamers Porter and Myles, with barges Wetback and Menominee, will bring 149,000 bushels of corn to Kingston from Chicago at 3¼c.

The schooner Ballou, with a party of the Belleville rolling mills' employes, passed down the river on a tour of the Thousand Islands. The party returned on Saturday.

The steamer India and consort Ceylon arrived Saturday at Garden Island, from Lake Superior ports, with timber and iron ore. After discharging the timber at the Island, the iron ore will be taken to Deseronto.

Organizer Flett, Toronto, of the American Federation of Labor. has been in the city for several days. On Wednesday he addressed the plumbers, gas fitters, steam fitters, etc., of the city, with the result that a union will be formed.

The dredge Nipissing, at work in the lower part of the harbor since the spring, will be allowed to continue work here for some time. It would take two dredges for another whole season to put Kingston harbor into perfect shape.

B. M. Britton, M. P., and Capt. Gaskin, of the Montreal Transportation Co., interviewed Hon. Mr. Mulock, at Ottawa Wednesday, and urged that the dredge at present doing work in the harbor be allowed to remain and dredge other portions of the harbor.

A local manager stated on Thursday that there was less traffic through the Welland canal this summer than for a long time. The coal trade has died out within the last few seasons because there is no tonnage on Lake Ontario now trading to the upper lakes.

Captain Thomas Donnelly, inspector for Inland Lloyds, on Wednesday, at Port Dalhousie, inspected the Advance, a newly constructed grain vessel of 50,000 bushels capacity, and to run from Port Dalhousie to Montreal. The new vessel was found satisfactory in every way.

Brevet Brig. Gen. Harry C. Kessler, of the United States volunteers, has purchased Bluff Island, of E. R. Washburn, of Kissan, Washburn & Co., New York. The price paid for the property was $5,000. Gen. Kessler will erect a fine summer cottage on the island, which is 25 miles from Kingston, and on the St. Lawrence.

The steambarge Richards and consort Ada, Oswego, unloaded on Wednesday, at the Kingston penitentiary wharf, 1,700 tons of hard coal. The contractor for the supply of hard coal for the penitentiary found difficulty in securing boats to bring over coal from Oswego, local vessel men combining and advancing the rate.

Electrical devices of all kinds, especially those lately patented as being suitable for illuminating purposes, will be exhibited at the city hall in connection with the convention of the Canadian Electrical Association, to be held here on the 29th, 30th and 31st. The hall will be specially decorated and lit up with uniquely designed electrical effects. The city council will entertain the 300 delegates to the tune of $200.

This morning the Calvin Company received word that their steamer Chieftain, which left Garden Island a week ago with a raft of timber for Quebec, had been quarantined near that place, on account of a smallpox case having been on board on the down trip. It seems that a hand was taken on somewhere down the river, but as soon as it was discovered that he had smallpox he was put off at Cornwall. News of the occurrence reached Quebec, and a quarantine was established on the steamer by the medical health officials.

BUFFALO.

Special Correspondence to the Marine Record.

Fire destroyed the Dakota elevator on Buffalo creek last Sunday. The loss is placed at $1,125,000. The elevator had a capacity of 850,000 bushels.

The license of Nelson Tibbets, engineer of the Buffalo tug James T. Martin, has been revoked because he permitted the water in the boiler to run so low that the crown sheet was burned.

Firms and companies which ship lumber down the lakes have come to believe that they ought to be getting some advantage of the lowering lake freights, and in consequence have started an attempt to beat the lumber rates down.

It is reported that the strike of the Anchor Line freight handlers at Erie is settled. The terms are that men who have been getting $50 a month will now receive $45; 30 cents an hour will be paid for overtime; weighmen and foremen are not to belong to the union.

A dispatch from Port Huron says: The Jenks Shipbuilding Co. has made preparations for the building of a third steel vessel, work on her to begin as soon as the big one now on the stocks is launched, the date for which event has been set for Aug. 20. The new boat is to be of about the same dimensions as the Ravenscraig, but with greater power.

A season of dullness in the freight market which promises to last through the present month and the greater part of September, has been fairly entered upon and it need surprise no one if considerable tonnage is withdrawn from service during the next few weeks to await a revival of the conditions which have existed up till now. There is no longer any pressure for vessels to carry ore outside of existing contracts, the movement of coal westward is at minimum stage, and shipments of grain out of Chicago are falling off. Under such conditions former freight rates cannot be maintained. The more observing vesselmen have for some time been predicting a period of dullness such as is now being experienced, and they do not expect a betterment for at least thirty days, when another steadily advancing market may be brought about and continue up to the close of navigation.

FLOTSAM, JETSAM AND LAGAN.

Why is a neat housekeeper like the sea? Because she is tidy.

Master: Pat, I have a suspicion that either you or I was drunk last night. Pat: Oi've a suspicion av that koind meself, sor. Master: Well, Pat, which one of us was it? Pat: Well, sor, Oi'll not be castin' anny reflictions, but Oi do be sayin' that Oi invied yez.—Ex.

The Viper, torpedo boat destroyer, which is engined by the Parsons Marine Steam Turbine Company, underwent recently at Wallsend-on-Tyne one hour's trial at maximum speed. The mean of two consecutive runs on the measured mile was 36.85 knots, and the mean of six runs was 36.58 knots.

The coroner's jury in the case of Oliver Oberg, who was killed in the collision between the barge Sage and the steamer Chicago abreast of Harsen's Island on July 29, brought in a verdict censuring the captain of the Chicago for negligence. And this in the face of the fact that the parting of the wheel-chains had placed the steamer beyond the captain's control.

The schooner Prussia, built at Garden Island in 1879, and rebuilt at Sarnia this season, has been given a new name by her owner, Capt. Williscroft. In future the boat will be known as the Cyrenian, of Sarnia. The Cyrenian has been thoroughly overhauled and is now in better shape than ever before. Capt. Williscroft has received the official documents authorizing the change of name.

Captain John G. Crowley, of Taunton, Mass., whose new six-masted schooner is nearing completion at Bath, Me., the first vessel in the world to carry that number of masts, has decided to have a seven-masted schooner built, with a deadweight carrying capacity of 6,500 tons. The six-master is to have a capacity of 6,000 tons and trade from Philadelphia and other North Atlantic points.

A visitor at this port Tuesday was the fine steel steamyacht Volanta, which was on her way to Lake Superior She is owned by A. D. Day and C. J. Throening and was in command of Captain R. P. McCorquedale. The Volanta was built forJay Gould, the railroad king, at an expense of $22,000 and is credited with a speed of 17 miles an hour. She is 100 feet over all and 11½ feet beam.—The Advocate, Sturgeon Bay, Wis.

There is a probability that the immense plant of the West Bay City Ship Building Co. will be in full operation during the coming winter. It is said by a gentlemen in a position to know that the shipbuilding company is figuring on the construction of three large steel steamers for one of the big firms that owns a large fleet of lake carriers. The details of the deal are not yet ready for the public, but may be given out soon.

Progress on the new plant of the New York Ship Building Co., at Kaighn's Point, Camden, has advanced so far toward completion that the company has accepted contracts for the construction of two merchant ships, work upon which will be begun within a month. One of these contracts is for an 11,000-ton freight and passenger steamer for Hawaiian-American Steamship Co., and the other is for a coasting steamer for the Pacific trade, to ply between San Francisco and Alaska.

A newspaper writer fond of statistics states that the transport over sea of one army corps of 30,000 men, with its horses, cannon and other requirements complete, required 144 steamships, whose aggregate tonnage amounted to 457,112. The number of trains of 22 to 27 cars each required to transport a division (10,000 men) was thirty-nine. Add to these the number of ships employed and the number of trains needed in carrying supplies of food, forage, ammunition, clothing, medical and other stores, etc., and one may form a faint idea of the enormous task accomplished by the British in transferring its immense army in South Africa and maintaining it there.

According to a dispatch from San Francisco, Capt. Frederick Jerome, an old-time sailor, who had the credit of saving over 1,000 lives during his career, died in that city on Monday. He was born in the southern part of England in 1823. He was presented with the freedom of the city of New York and an elegant snuff box for saving hundreds of lives in the wreck of the Henry Clay and Ocean Monarch in 1846 and 1848. Capt. Jerome was especially honored by a present from Queen Victoria for his heroism in the British channel. He was presented with a gold medal by the city of Liverpool and was made a life member of the Pioneer Society of California by unanimous vote.

The unusual occurence of shortening a steamer has been completed in the yard of the E. J. Codd Co., Baltimore. It is not unusual to have steamers lengthened, but the case of the freight steamer Martha Stevens is probable unique. She was purchased from the Ericsson Line by the Merchants' Transportation Co., of Trenton, to run between Trenton and New York. Being too long to operate in the Delaware and Raritan canal, it was determined to cut off about 25 ft. of her length. As reconstructed, in the short space of 13 days, she is 135 feet long.

Canada is surely a great country. The Guelph, Ont., Herald says that seven years ago a farmer in that neighborhood hung his vest in the barn yard; a calf chewed the pocket in the garment, in which was a gold watch. One day recently the animal, staid old cow, was butchered for beef, and the watch was found in such a position between the lungs of the cow that the process of respiration—the closing in and filling of the lungs kept the stemwinder wound up, and the watch had lost but four minutes in the seven years. Skeptics are shown the watch in evidence of the truth of the story.—Canadian Manufacturer, Toronto.

The following is extracted from a San Francisco contemporary: Captain H. G. Williams, who has been struggling against the salt sea storms on Neptune's domain, is now having bad weather and heavy squalls. He married a young wife, and as the captain is not as young as he used to be, can't take a trick at the wheel and haul aft the jib sheets at the same time, so she is now head on to sea and is asking a permit to discharge the captain and ship a new master. The old skipper has $30,000 worth of property, and the wife and lawyers want it. He is now in jail doing six months for rattling her down. Honest sailors are plundered by designing women and rascally lawyers, so help the old captain, or call on him. You may get on a lee shore yourself, and your anchors under the forecastle head. That is the time you need a tug to get you off. Lots of you, captains, are rich and have nothing to do, go see what you can do for the old man if you have any particle of Christianity about you. I myself, though an Atheist, can still feel for those in distress.

LITERARY NOTES.

The author of "The Workers," Walter A. Wyckoff, has published nothing since the appearance of those two remarkable volumes. In the September Scribner's he will reappear as a writer with an account of his journey to the far North with one of the Peary relief expeditions. He will tell particularly of his observations of the strange race of Esquimaux, known as the Arctic Highlanders. The articles contain much valuable observation, and are beside amusing and entertaining on their adventurous side.

From Benjamin Taylor's "Storyology." There is, however, a curious survival of the personal element still to be traced in some of the sailors' chanties. Take, for instance, that remarkable one about "Burying the Dead Horse." Without going into the question of the song and its attendant ceremonies just now, the following lines may be quoted as bearing on our subject:

You poor old horse, what brought you here,
After carrying turf for many a year?
From Bantry Bay to Ballyback,
When you fell down and broke your back?
You died from blows and sore abuse,
And were salted down for the sailor's use.
The sailors they the meat despise;
They turned you over and —— your eyes;
They ate the meat and picked the bones,
And gave the rest to Davy Jones.

And the offal of a ship is thrown to Davy Jones—doubtless because there is nothing else to be done with it.

Sportsmen, especially those who are accustomed to cast their lines in the Great Lakes and their tributaries, will greet with pleasure this useful and informing book. It is by one of the most experienced American anglers and meets the demand for a practical handbook which shall describe the habits and environment of the fresh water game fish commonly met with in this country, and explain in a simple and easy comprehensible way the methods of their capture. As an expert fisherman, Mr. McCarthy is able to speak with authority regarding all fish which are the object of the angler's pursuit. His clear and practical counsel as to rods, and takle and their use and the various details of camp life, render this book a most helpful companion for all sportsmen and campers. Dr. David Starr Jordon has read the manuscript and has lent the weight of his approval by writing an introduction. The book is profusely illustrated with pictures and useful diagrams, by Eugene M'Carthy. With an introduction by David Starr Jordan, president of the Leland Stanford Junior University. D. Appleton & Co., New York. $1.00.

DURING last year there was an increase in the production of iron ore in the Bilbao district of about 30 per cent. over the previous year. Not only the Bilbao-Santander district shows an increase, but also the rest of Spain, where last year's production represented double the quantity of three years ago. Until lately the raising and working of ores was carried on among the littoral provinces, but the large demand and higher prices have induced people to seek mines even far inland. Mines are now worked at Grenada and Jean, and in a short time the mines at Soria, Burgos, Galicia, Albacete and Cordova will supply ores.

Truscott

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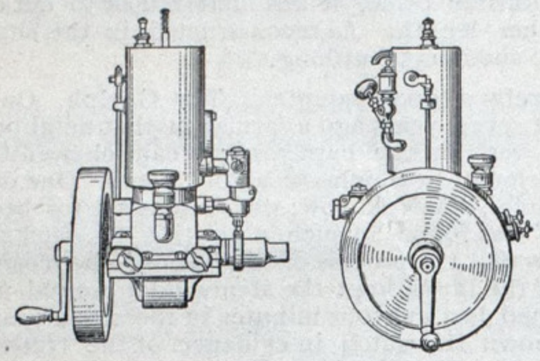

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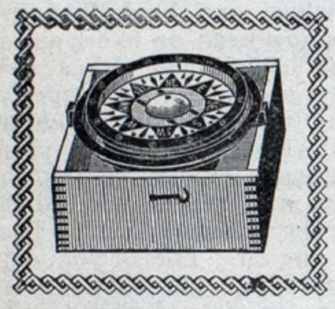

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THE USE OF ALUMINUM.

Fifteen years ago the total annual consumption of aluminum throughout the world amounted to only 2½ tons, but since that time remarkable progress has been made in securing the adoption of this metal for every day uses by the general public. Prof. Joseph W. Richards, of Lehigh University, called attention to this fact in an interesting lecture delivered before the Franklin Institute, and he predicted that it would increase its usefulness until its only rivals would be iron and steel. It is not yet 75 years since aluminum was first isolated as a metallic powder, and not yet 50 years since it made its appearance as a true solid metal, while until 15 years ago its price was counted in dollars per pound, and it was used only for articles of luxury or for purposes where lightness was a desideratum and expense was not considered. To-day the use of aluminum for culinary utensils is extended and it is also being utilized in the manufacture of ornamental articles, many of which possess high artistic merit. Printing from aluminum plates has become an important branch of the lithograph business. The printing is entirely surface work, and is being generally done on cylinder presses instead of flat-bed machines, the aluminum sheets being bent on to the cylinder, and thus allowing of fast running. This is, indeed, a most promising field as the new process has many advantages over the lithographic stone.

It is in the electrical field, however, that the greatest possibilities are met. Prof. Richards contends that electric conductors can now be laid more cheaply in aluminum than in copper, and he explains that pure aluminum has over 60 per cent. the conductivity of pure copper, and is fully as strong and resistant to atmospheric influences. It is therefore only necessary to take an aluminum wire one-fourth as large again in diameter as a copper wire (giving a little over 50 per cent. more section) to get equal conductivity. Such a wire weighs one-half as much as the copper wire it replaces, and costs only two-thirds as much. Long-distance transmission lines and trolley-line feed wires of aluminum are being put in as fast as the makers can supply the metal. Over 500 tons of aluminum were used for this purpose last year, supplanting 1,000 tons of copper, and probably double as much will be used this year. This one use promises in the near future to consume thousands of tons a year.

Powdered aluminum is now being used for many purposes, such, for instance, as making aluminum paint for metallic surfaces, and many interesting experiments are now being made to extend its application in other directions. It has been demonstrated to be of value in the reduction of refractory metallic oxides to the metallic state. Tissier, in his experiments 40 years ago, proved that aluminum energetically reduces some metallic oxides. Others, following in the same line, have made use of the same energetic reducing power of aluminum to produce carbonless metals, by incorporating with the finely-divided metallic oxide the needful quantity of granulated aluminum and reducing the mixture with the aid of heat, in magnesia lined crucibles, adding a certain quantity of flux to this mixture to facilitate the reduction. The process was found to be especially applicable to the production of carbonless manganese and cromium of a high grade of purity. A further improvement has been developed by mixing the metallic oxide with powdered or granulated aluminum and igniting the cold mixture in a cold crucible. The heat thus generated is sufficient to melt the reduced metal and even the resulting alumina, and the danger of explosion is very small. The generation of heat is so rapid that the crucible does not become warm outside for some minutes, and is so intense, probably between 2500° and 3000°, centigrade, that it unbearable to the eye. The method is applicable to reducing to metal almost all metallic oxides except those of magnesium, the alkaline earths, and earths, and has been applied to the more expensive metals which are ordinarily considered as difficult to reduce such as manganese, chromium, titanium, tungsten, molybdenum vanadium, uranium and boron. The importance of these investigations, says Modern Machinery, will be recognized by all who are engaged in metallurgical work.

GEORGIAN BAY LUMBER.

At a recent meeting of the Ontario Lumbermen's Association, held in Toronto, one of the principal matters for discussion was the business outlook for the balance of the year, particularly as to the advisability of the present prices being maintained.

The following facts were presented:

	Feet.
Total amount of lumber of the cut of 1899 on hand at manufacturing points on Georgian Bay	11,000,000
Total cut of 1900, as now known	470,000,000
Total	481,000,000

Of this new cut 70,000,000 feet is sold to American yards for distribution and placed for industrial uses, leaving only 411,000,000 feet available for the season's competitive trade, including last year's stock. Taking into consideration the stocks that under ordinary conditions must be carried over from one year to another at these mills to be 220,000,000 feet, which was the quantity on hand January 1st, 1899, it was shown that the amount short on this season's market from Georgian Bay points would be at least 240,000,000 feet.

The Canadian Manufacturer, Toronto, states that the meeting was unanimously of the opinion that with the limited cut and the active English demand, and with a very large shortage of logs at all manufacturing points in Wisconsin and Minnesota, as confirmed by the trade press of the United States, and also a great shortage occasioned by the Ottawa fire, there was no fear that a good demand at present ruling prices for all grades would soon set in. Notwithstanding this, owing to the high wages of last winter, only a fair profit would remain to the mill.

REPORTED BY THE LOOKOUT.

THE water tube boiler has had a marked effect in increasing the permissible amount of heating surface in marine practice. With less weight in the boilers than was formerly necessary, the heating surface is much more liberal. In review of the warship construction in 1899 in the English Navy, Engineering states that the minimum for the year was 2.4 square feet per indicated horse-power against 1.7 square feet formerly.

THE total number of vessels entered at British ports in 1899 was 326,143, of a tonnage of 86,814,570, compared with 327,377 vessels of 85,132,533 tons in the previous year. Of these boats 85,669 were driven by steam, and 240,474 by sails, as against 91,547 and 235,830 respectively in 1898. Of foreign vessels 10,508 sailing ships and 23,170 steamers entered British ports in 1899, the grand total of entries being 359,821 vessels of 105,188,504 tons. A considerable increase was manifest in shipbuilding, the total output in the United Kingdom (exclusive of vessels built for the Royal Navy and foreigners) being 1,245 vessels, with a tonnage of 749,414. In 1898 the figures were 1,370 vessels, and 695,997 tons.

THE Steamship, Leith, Scotland, says that foreign shipbuilders continue to enlist the services, as managers, foremen, and leading hands, of men having skill and training in the art and science of ship construction as known and practiced in British centers. Mr. Herbert C. Sadler, assistant to Prof. J. H. Biles, of the Elder chair of Naval Architecture in Glasgow University, has been appointed to the newly instituted chair of Naval Architecture in the University of Michigan. Mr. A. Davie, of the designing staff at Denny's of Dumbarton, has been engaged by the directors of a shipbuilding and engineering establishment at Trieste, to manage the mercantile branch of the company's shipbuilding yard. For the new shipbuilding yard being established at Hoboken, on the Scheldt above Antwerp, the general manager appointed is a gentleman till recently employed in a well known Thames shipyard.

IT is becoming somewhat of a puzzle among the Departments of the Navy to fix upon a use, in times of peace, for the large number of torpedo boats and destroyers now approaching completion. There are no men available, nor are there likely to be, for the proper manning of these valuable craft; neither is the Government provided with a fresh water basin in which the boats can be laid up in ordinary. New Orleans fondly aspires to the custody of several of the larger destroyers, having in view the possibilities of the repair yard and dry dock now nearly ready for installation at Algiers, but the Department has thus far given no hint of its intentions in the matter. It is probable, however, that all of these boats and destroyers will be commissioned for brief service, and at intervals in the future will be mobilized with the intention of maintaining them in an efficient condition of preparation for any contingency likely to arise.

EXPERIENCE OF AMERICAN MACHINISTS IN CHINA.

"A great many skilled machinists and engineers have gone to China from this country during the past ten years," said the the captain of a large cargo steamer, who has made frequent trips to the flowery kingdom. "Most of them were engaged to take charge of big plants, and while the job seemed tip-top on the surface the result was nearly always disappointing. The Chinese are very anxious to avail themselves of foreign skill, but take care to dispense with it at the earliest possible moment. A manufacturer, for example, will put in modern machinery and hire an American expert as a superintendent, giving him a couple of sleepy-looking young Chinamen as assistants. In six months the sleepy-looking pair have mastered all the technicalities of the plant and some pretext is found for getting rid of the American.

"The fact that he has a five or ten year contract is no special obstacle. All labor contracts may be voided for good cause, and in China there is never any difficulty in proving anything you like about a man. I knew an Ohio engineer who went to Canton several years ago to set up and operate a large plant in a silk mill. He was under a five-year contract at $6,000 gold, per annum, and thought he had a soft thing. Before his first year had elapsed he was discharged on the ground of habitual drunkenness, neglect of duty, waste of material, insubordination and a dozen so other little things I have forgotten. Being entirely innocent, he showed fight, but was overwhelmed by a cloud of witnesses and the case against him was made so strong that the consul refused to interfere. His place was taken by his native assistant, who made a botch of it and destroyed thousands of dollars worth of costly machinery, but that didn't help the engineer who was sacked. American experts who know the ropes insist upon having a clause in their contracts authorizing them to employ their own assistants."—New Orleans Times-Democrat.

TRIAL OF THE VARIAG.

The Russian cruiser Variag arrived at Philadelphia, Pa., July 30, from her trial trip and went to the yards of her builders, the Messrs Cramps. Although an accident interfered with the proposed continuous twelve-hour run test, the speed she developed during the seven hours and a half, during which she was speeded, was so far in excess of the contract requirement that the Russian board of inspection unanimously agreed that the essential elements of the trial had been complied with. During the run from Boston the speed trial began off Nantucket Shoals. A continuous speed of 23.6 to 23.7 knots was developed for 7½ hours. At that point an accident occurred to one of the high pressure cylinders, which compelled the shutting off of the engine affected. The remaining part of the contemplated trial was therefore abandoned. The Russian board of inspection, however, took not only into consideration the speed developed in the first seven and a half hours, but also the speed which the vessel displayed previously on the run off Boone Island, when she made 24.6 knots in a spurt, and decided that there could be no reasonable doubt of the ability of the vessel to maintain a speed considerably in excess of the contract requirement of 23 knots an hour.

The following dispatch was sent July 30 to Charles H. Cramp, at Bar Harbor, Maine, by the officers and naval experts commissioned by the Russian government to superintend the trial of the Variag:

"Philadelphia, Pa., July 30.—To Charles H. Cramp, Newport Hotel, Bar Harbor, Maine: In sending their congratulations to Charles H. Cramp, the witnesses of the trial of the Variag desire to add that the ship has not only equaled, but surpassed the performance promised. We consider the Variag to be one of the great triumphs of naval construction."

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DISTRICT,
DETROIT, MICH., August 10, 1900.

Notice is hereby given that two (2) black spar buoys have this day been placed on the westerly edge of the channel in the St. Clair river, to mark the twenty foot curve between the wreck of the Schooner Fontana and the west bank of the river.

The shortest distance between the Fontana and this curve is about 500 feet, and vessels will find twenty feet and over between the wreck and the line marked by the two spar buoys referred to.

The most northerly buoy is about 450 feet due west from Fort Gratiot light-house, and the southerly buoy is about 300 feet due south of the angle making out from the Grand Trunk car works.

These buoys will be kept in position until further notice.

Straits of Macinac, Mich., Major Shoal.—The light-house tender Marigold replaced in position yesterday the 2nd class can buoy painted with red and black horizontal stripes, that marks the Major Shoal.

By order of the Light-House Board.

J. C. WILSON,
Commander, U. S. Navy, Inspector 11th Light-House Dist.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 10TH DISTRICT,
BUFFALO, N. Y., Aug. 10., 1900.

Notice is hereby given that owing to the necessity for drills and dredges working in the vicinity of and over the location of Limekiln Crossing, North, light-vessel in the Detroit river, Mich., that vessel will be temporarily moved about 200 feet to the southward of her proper position, on or about August 10th, 1900.

During the progress of the work of widening and deepening the channel at Limekiln Crossing, she will remain slightly out of position, but will be replaced as soon as practicable.

By authority of the Light-House Board.

FRANKLIN HANFORD,
Inspector 10th L. H. District. Commander, U. S. N.

UNITED STATES ENGINEER OFFICE,
DULUTH, MINN., August 11, 1900.

All vessel masters are warned and requested, in entering and leaving Agate Bay (Two Harbors), Minn., to keep at least 500 feet away from the westerly end of the east pier, on a line running southwest therefrom. There is a stone embankment there, upon which they are in danger of getting aground, and also run the risk of fouling their propeller wheels with wire and rope cables, which are legally there by direction of the United States.

CLINTON B. SEARS,
Major, Corps of Engineers, U. S. A.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report as follows regarding the Eastern freight situation:

"Whilst rates by steam for all other trades have either improved or maintained a very steady front, grain freights have not participated in the general advance and the few fixtures reported could only be effected by means of a decline below the previously established figure of 4s. 2d. to Cork f. o. Business generally continues somewhat handicapped by the scarcity of open tonnage and the consequent firmness of owners' demands, under which charterers at the Atlantic cotton ports appear unable to accept tonnage placed before them Rates for time charters are maintained on the high level reached by owners; the latter are evidently more anxious for long terms of charter, a fact denoting their belief that we have now reached top figures. It may be well to state here that rates obtainable on parcel lots of grain and general cargo at the Northern ports and in the Gulf, do not by any means reach the equivalent of the cost of boats now taken thence on time or on the net basis.

In regard to sail tonnage we can only repeat that the unprecedented scarcity of square rigged vessels on spot or near by, together with the tardiness of offerings has forced business to nearly a standstill.

Though the demand is not a very active one, rates naturally rule very firm with an upward tendency and the few charters reported have been made on terms very favorable to owners.

There is demand for case oil ships to the far East, and though nothing of importance has lately been accomplished in this line, we feel assured that with firm offers of tonnage in hand, higher rates than now quoted, may be obtained."

CAPT. ROLLS, of the steamer Admiral, throws some light on the recent collision between the Canadian schooner M. L. Breck and the steamer Lockwood. Capt. Rolls says that the Admiral passed down through the Limekilns Crossing a few minutes ahead of the Lockwood. The schooner Breck was at anchor in the channel. "Don't you think you are in a dangerous place?" shouted Capt. Rolls. "I've as good a right where I am as anyone else," shouted someone from the schooner. "Are you not afraid someone will strike you?" questioned Capt. Rolls. "This is Canada," came the answer. The Detroit Journal says: "In relating the incident to a friend, Capt. Rolls said that the answers he received so exasperated him that he could give no reply, but he saw the Lockwood coming along after him, and kept watch. The schooner swung around, presumably with the suction of the big freighter, and the jibboom smashed into the pilot house of the steamer, putting her steering gear out of order and carrying away the deck railings and rigging as the steamer swept past. The steamer made a sheer for the rocks and landed less than 500 feet from where she struck four years ago.

PROPOSALS FOR PATROL BOAT.

The Ohio Fish and Game Commission will receive bids for the construction of a patrol boat for Lake Erie.

Plans and specifications may be had on application to the Secretary of above Commission, Athens, Ohio.

Sealed bids will be received up to 12 o'clock noon, Chittenden Hotel, Columbus, Ohio, September 4th, 1900.

All bids should be mailed to the Secretary Ohio Fish and Game Commission, Chittenden Hotel, Columbus, and any other correspondence to same address, Athens, Ohio.

The Commission reserves the right to reject any or all bids. 32–33

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F. A FORBES, General Manager Michigan Telephone Co., Detroit, Mich.
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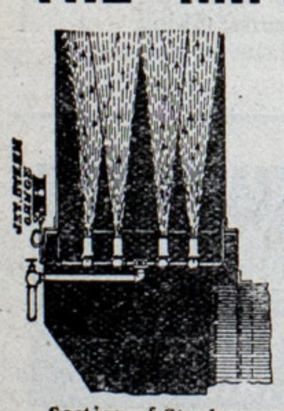

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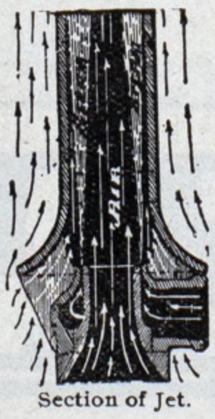

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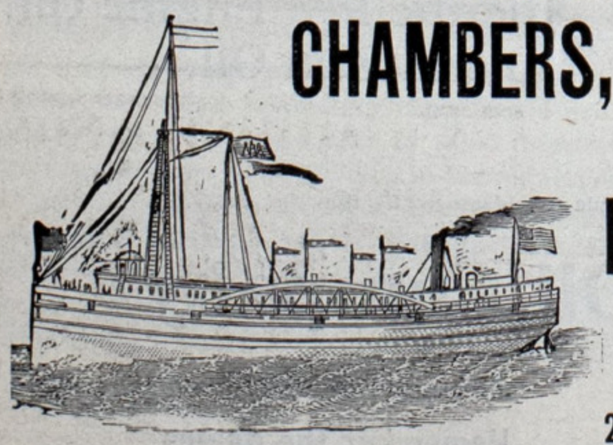

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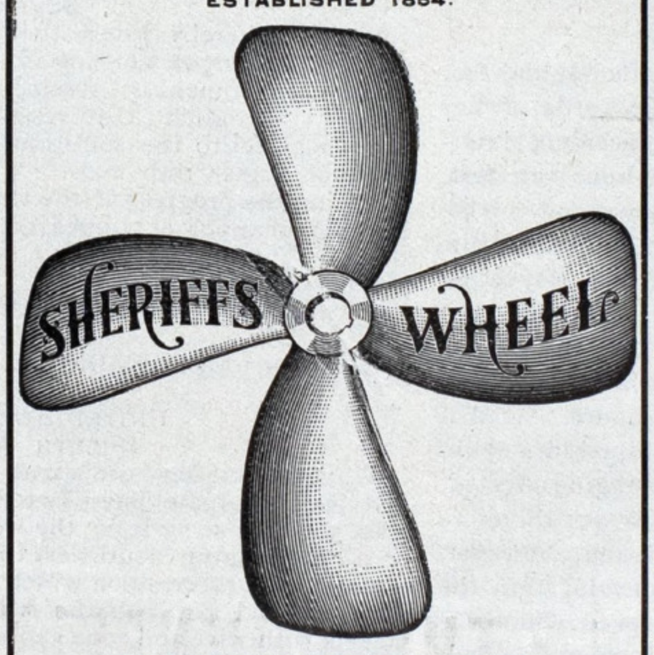

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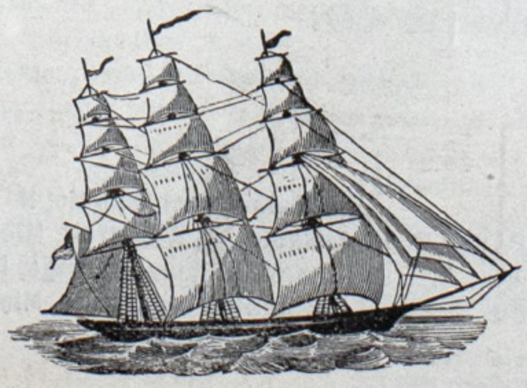

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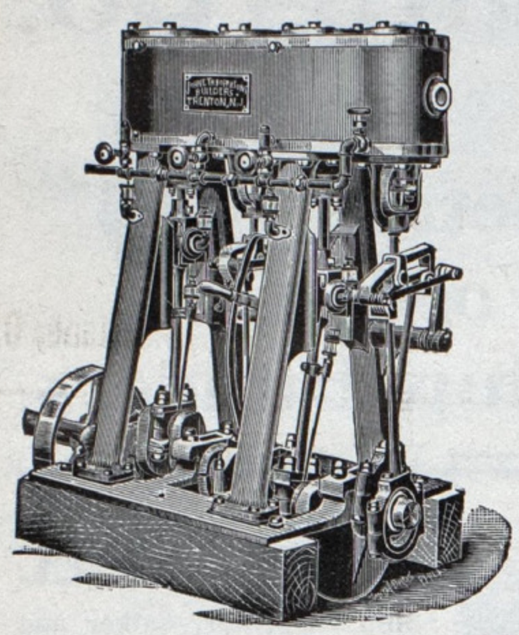

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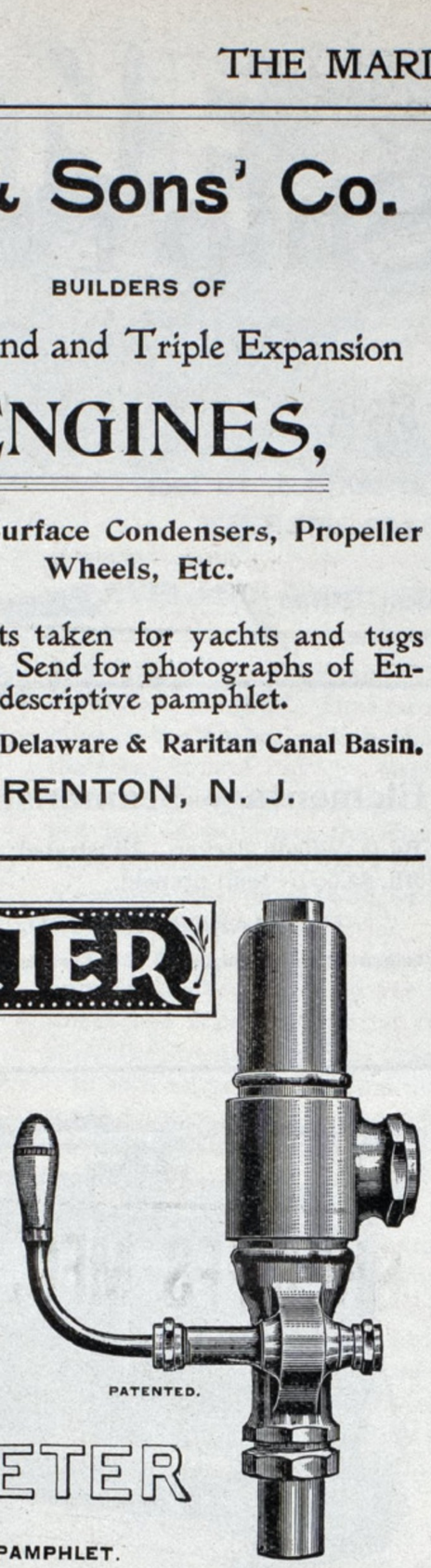

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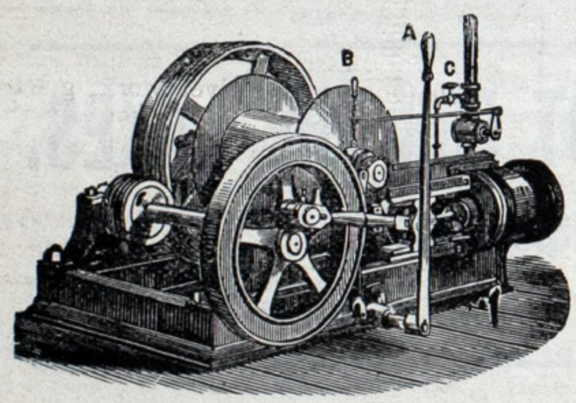

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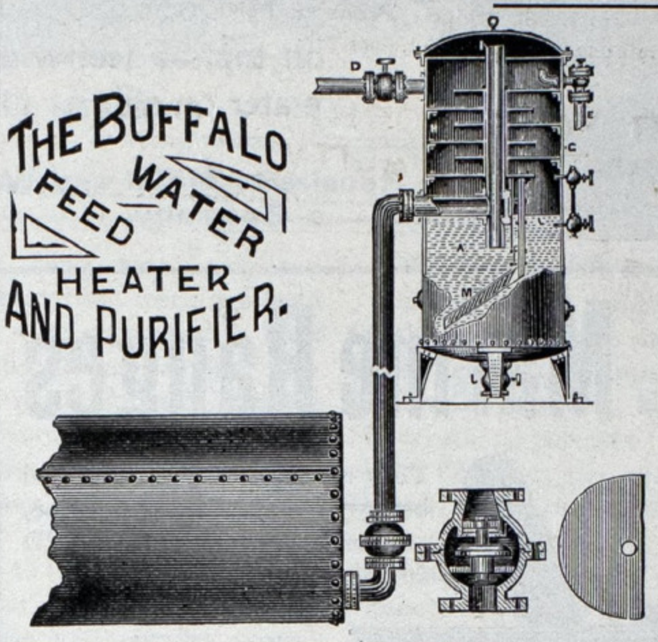

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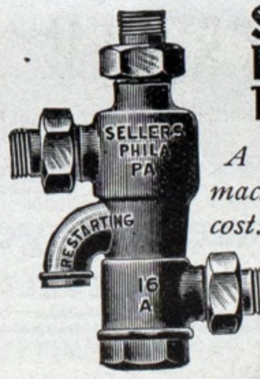

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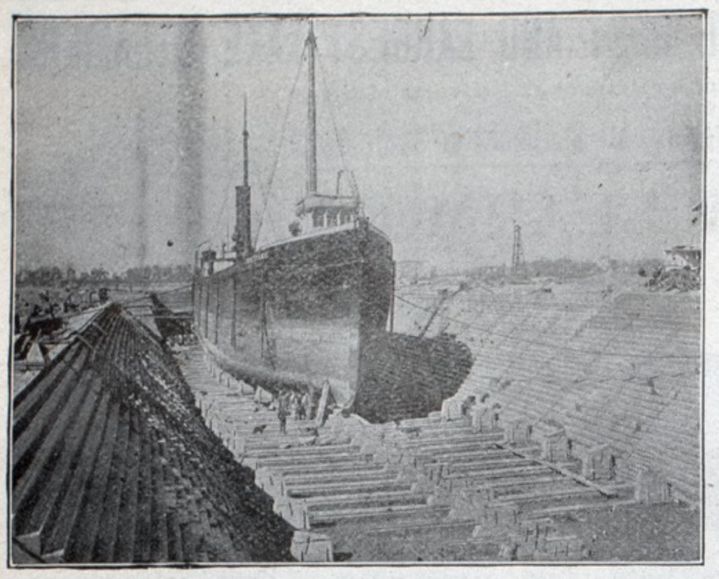

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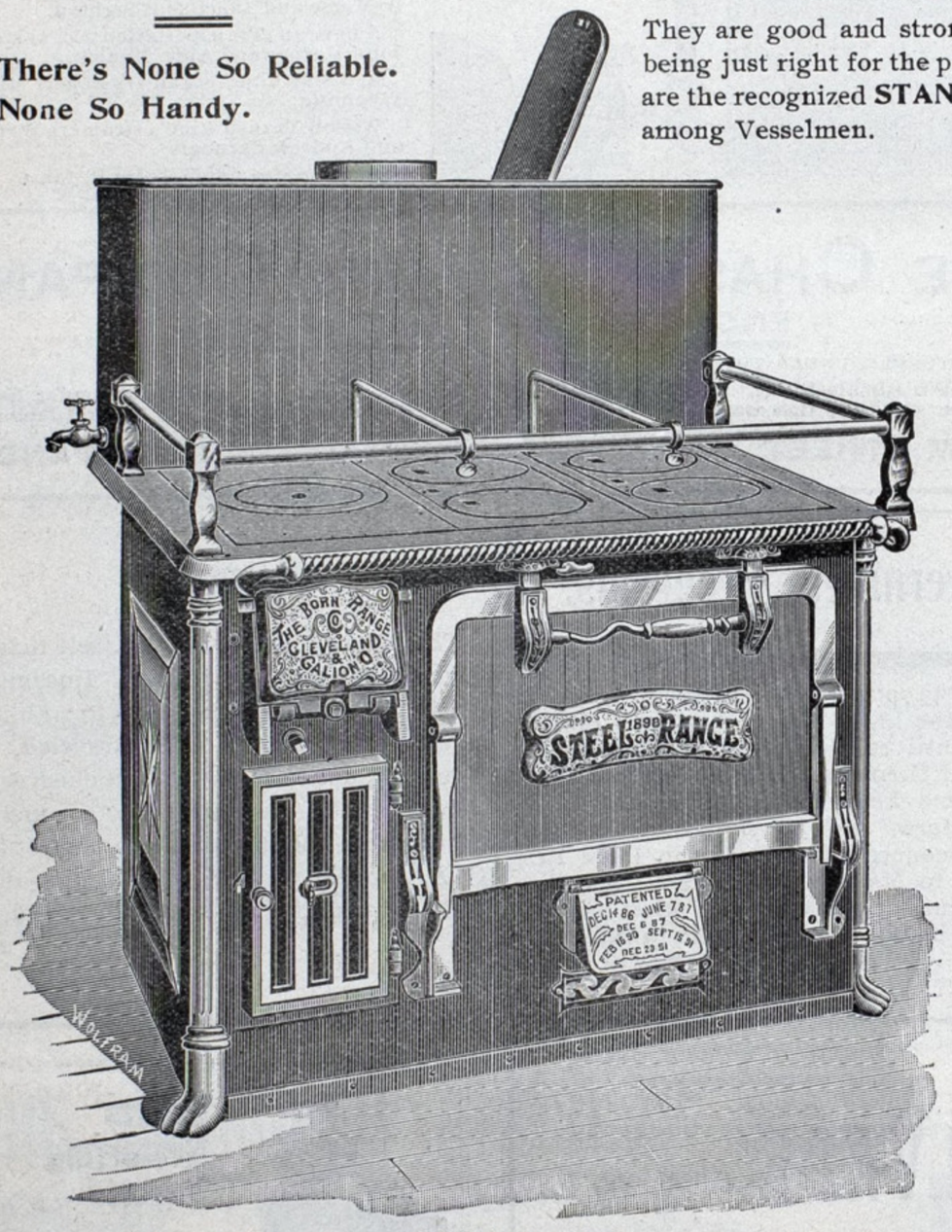

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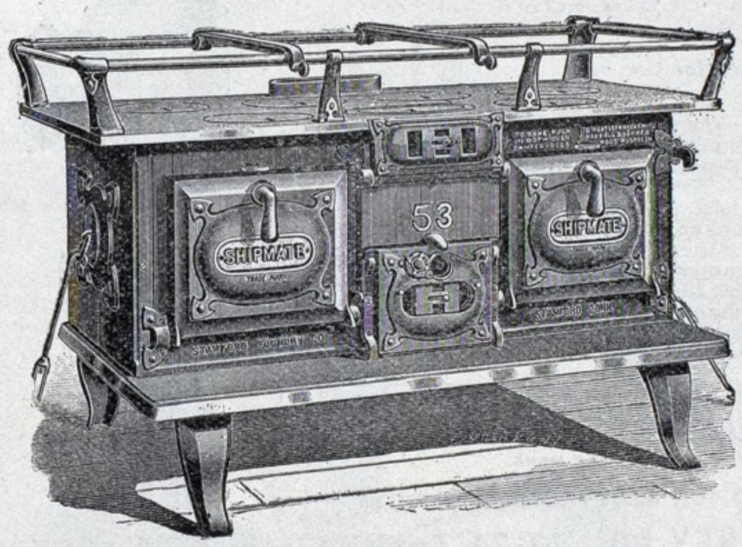

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